NOTICE OF MEETING

CITY OF BRANSON

CAPITAL IMPROVEMENT COMMITTEE

Committee Meeting – Wednesday, September 7, 2011 – 10:00 a.m.
Fish Bowl Conference Room – Branson City Hall – 110 W. Maddux

AGENDA

1) Call to Order.

2) Roll Call.

3) Engineering Selection Veterans Boulevard Bridge Rehabilitation Project.
[RFP-Veteran's Blvd Bridge] [HDR] [Walter P. Moore] [Delich, Roth & Goodwillie] [TransSystems] [Burns & McDonnell] [Great River Associates] [CDG] [Shafer, Kline & Warren] [McDonald & Warger] [Crawford, Murphy & Tilly] [Cook, Flatt & Strobel] [McClelland Consulting Engineers] [Horner & Shifrin]

4) Capital Project Status Update.

5) Change Order Update.

6) Adjourn.

TO: Capital Improvements Committee

FROM: David Miller, City Engineer

DATE: September 1, 2011

SUBJ: Veterans Boulevard Bridge Engineering Proposals

Veterans Boulevard Bridge in downtown Branson needs some repair work. This 430 foot long bridge, originally built in 1931, spans over Roark Creek and the MNA Railroad. Historically the bridge was owned by MoDOT however in 2004 the city of Branson accepted the bridge from the state as part of an overall agreement on road maintenance issues. The December 2009 MoDOT biennial inspection report indicated that there were issues with concrete spalling and deterioration. It was recommended that the city have further reviews completed. In June 2011, a structural evaluation was done on the bridge by Shafer, Kline & Warren (SKW) through the MoDOT Bridge Engineering Assistance Program. This firm was "pre-selected" by MoDOT as their consultant to provide this type of studies so Branson did not do a Request for Proposals process to select the firm. This $11,000 study was done at no cost to the city thanks to SKW's efforts to obtain the state funds. (Typically, those funds are capped at $2500 per study so obtaining the extra money was unusual)

The SKW study recommended the following repairs:

- Repair deck patches
- Repair deck girders delaminated areas
- Repair end and intermediate bents deteriorated sections
- Seal the existing deck below the sidewalk
- Replace the existing sidewalk with a new 6' sidewalk including new guardrail/barrier along the sidewalk
- Install new fencing along sidewalk at correct height including taller section over the MNA Railroad
- Install new street lighting along west side of the bridge

With the study complete, and design funds for the repairs budgeted this year, staff proceeded with the RFP process and received 13 proposals. The SKW study was complete and considered separate from the design and therefore Branson's ordinances did not allow for simply retaining SKW for the final design work. SKW's study was done well and they are qualified to provide the final design work.

The 13 proposals received were:

H&S – Horner & Shifrin

HDR

WPM – Walter P. Moore

DR&G – Delich, Roth & Goodwillie

TranSystems

Burns & McDonnell

GRA – Great River Associates

CDG

SKW – Shafer, Kline & Warren

MW – McDonald & Warger

CMT – Crawford, Murphy & Tilly

CFS – Cook, Flatt & Strobel

MCE – McClelland Consulting Engineers

The criteria, and their weights, used to evaluate the options were (in order of importance):

Experience with this type of work - High

Qualifications of individuals - High

Description of how to complete project - Medium

Other information - Medium

History of on time & budget - Low

Office location - Low

Schedule - Low

As staff reviewed the proposals, the item that was considered most important was experience with "rehabilitation and repairs" of old existing bridges. This was either indicated in the firms experience or by the qualifications of the team members and so those two criteria were given the highest weights. This type of work is completely unlike the design of new bridges. A firm may have indicated that they designed hundreds, or thousands, of new bridges but that does not give them the knowledge or experience to design methods to repair the problems with the Veterans Boulevard Bridge. Experience with "inspections" of old bridges was relatively important which would give an indication of a firm's ability to determine the extent of the bridge problems but inspections without actual rehabilitation design experience was also less desirable. With this thought in mind, the following charts indicate the four firms that presented the most experience or information on rehabilitation and repairs of old bridges and they were staff's highest ranking firms and the ones recommended for further consideration. The committee may also want to consider SKW further because of their recent evaluation work on the bridge, although they ranked lower than the top four firms because their proposal did not indicate as much experience with designing rehabilitation and repairs.

The description of how to complete the work was given a medium weight in the ratings because the procedure that will need to be followed is relatively straight forward. The "Other Information' criteria was also given a medium weight and points for this

criteria were given when a firm presented unique or insightful information that was above the basic RFP requirements.

The other criteria were given low weights. History of completing projects on time and budget is important but so often is beyond the control of the consultants so staff felt a lower weight was appropriate. This project will have minimal public interaction and so office location is not very important as a consideration. Lastly, schedule was a low weight because the timeline will probably be influenced more by approvals from state, federal and railroad officials and the acquisition of right-of-way so whether the design is done in 5 months or 8 months will not greatly impact the progress.

The question of "Engineer Selection for Veterans Blvd Bridge" was evaluated by means of a decision table.

	Experience with this type of work	Qualifications of individuals	Discription of how to complete project	Other information	History of on time & budget	Office location	Schedule	Summary
H&S	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
HDR	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
WPM	Excellent	Excellent	Excellent	Excellent	Fair	Excellent	Excellent	Excellent
DR&G	Excellent	Excellent	Excellent	Excellent	Good	Good	Excellent	Excellent
TranSystems	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Good	Good
Burns & Mc	Excellent	Excellent	Good	Excellent	Good	Good	Excellent	Good
GRA	Good	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Good
CDG	Good	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Good
SKW	Good	Excellent	Good	Excellent	Fair	Excellent	Excellent	Good
MW	Good	Excellent	Excellent	Fair	Excellent	Good	Good	Good
CMT	Excellent	Excellent	Good	Good	Excellent	Excellent	Excellent	Good
CFS	Good	Excellent	Good	Good	Excellent	Excellent	Good	Good
MCE	Good	Excellent	Good	Fair	Fair	Good	Excellent	Good

Alternative choices considered are listed down the left side of the table. The criteria used to evaluate the various options are listed along the top. Initially entered in no particular order, both the choices and the criteria were then repositioned according to importance of criteria and effectiveness of individual choices in meeting them.

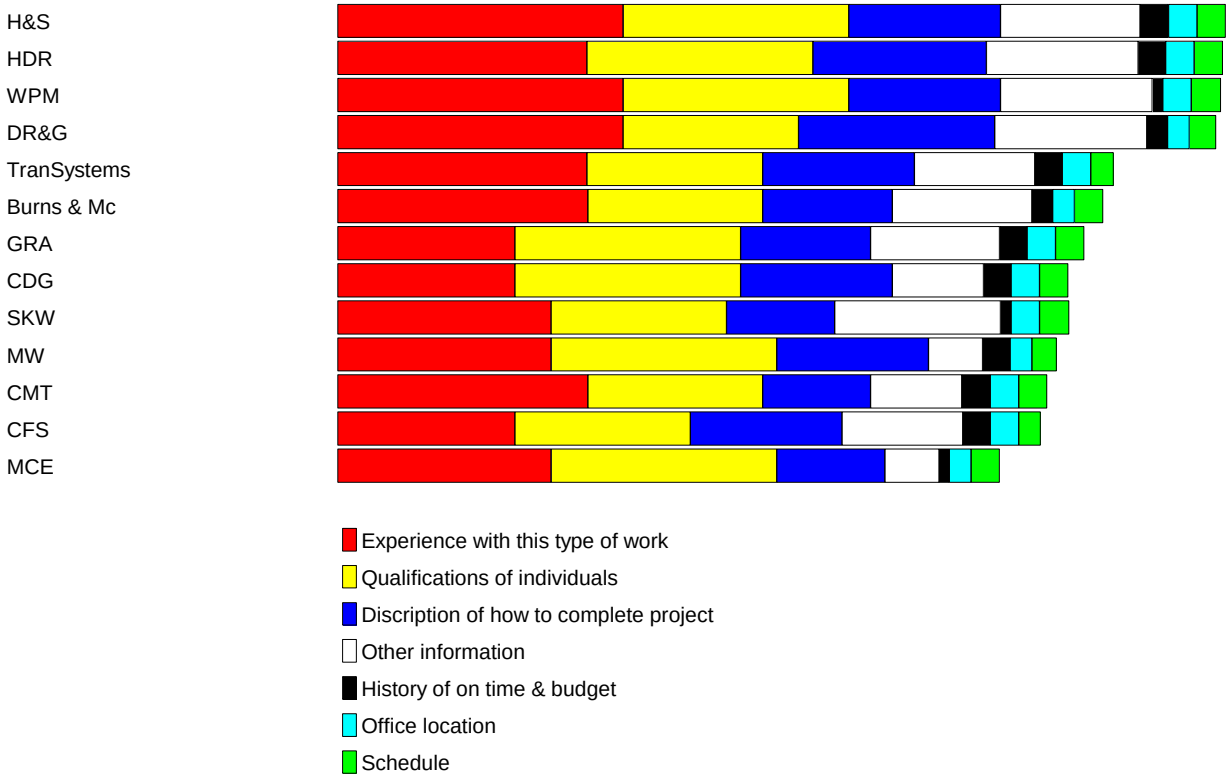
As criteria are evaluated and weights assigned according to which factors are considered to be most significant, the factors are sorted from left to right in order of

importance (i.e., the factor considered by the decision maker to be most significant in meeting overall needs ends up in the leftmost position).

Similarly, as choices are evaluated according to effectiveness in meeting criteria, the best choices migrate to the top of the list. When the process is complete, the best choice should emerge at the top.

As selection alternatives and the criteria to be used in evaluating them are entered into the table, weights are assigned to each of the evaluation factors so that they are ranked in order of their importance in fulfilling the overall task.

Relative strengths of the various choices in each of the factors are illustrated in the following graph:



In conclusion, staff would recommend any of the top four rated firms be considered by the Capital Improvements Committee. In addition, the committee may want to give further consideration to SKW due to their work on the initial evaluation and study.

In the past, the Capital Improvements Committee has found it helpful to understand some of the thought process that staff used during the proposal reviews. Therefore, the following comments are a summary of the positive aspects of each

proposal. This is not intended to influence the committee's decision and individual reviews, but simply to provide some additional information.

H&S (Horner & Shifrin): They designed the rehabilitation plans for the old Taneycomo Bridge now under construction. That bridge was built at the same time as the Veterans Boulevard Bridge so the knowledge they have gained regarding the design, reinforcing, concrete strength, etc. would be helpful on this project. They are the on-call consultant for MoDOT in the St. Louis area for designing bridge rehabilitations. They mentioned doing a cost comparison on the LED street lights, using barges instead of a causeway and they created a before/after photo of the bridge which is the extra effort needed to show their interest in the project. They have not worked for Branson in over 15 years but always have excellent proposals.

HDR: Their experience indicated similar bridge rehabilitation projects. They had a good description of the process they would be using on the project. They also included some information on how to construct the sidewalk repairs including a light-weight sidewalk option to reduce the load on the bridge. They are now working for the city on the Utility Rate Study and the Lift Station #9 project.

Walter P. Moore: Their experience included similar bridge rehabilitation work. They included some good information on the analysis of concrete deterioration. Their ability to provide condition assessments and evaluation of the old bridge was good. They mentioned distress from carbonation from the train engine exhaust, which was different from any other proposal. They last worked for the city on the Sycamore Street Reconstruction Project and the storm sewers associated with Branson Landing (for which they received an award for excellence)

DRG (Delich, Roth & Goodwillie): They have done work on another bridge projects identical to this work. They provided an excellent description of how to address the cantilevered sidewalk repairs. They suggested a reduction in lane widths to reduce the bridge loads and reduce the costs. They suggested changes to the guardrail, parapets, etc. which showed some innovative thinking. Overall, a great proposal with good descriptions of the problems. They were the design firm on the Highway 65/248 interchange improvements and developed some creative ideas that saved the city hundreds of thousands of dollars.

TranSystems: Their team had good experience and have done 1,450 bridge inspections and mentioned six bridge rehabilitation projects they completed. They are the #9 bridge design firm in the nation. They were the design firm on the Fall Creek Road extension project.

Burns & McDonnell: This firm recent acquired "Harrington & Cortelyou" which was the premier bridge design firm in Missouri. Because of that acquisition, Burns &

McDonnell can know claim to be the designer of the Branson Landing Boulevard Bridge over Roark Creek and the Skaggs roundabout. That means they have all the information in their files on wetlands, right-of-way, sanitary sewer locations, roundabout traffic control, etc. For experience, they did mention similar bridge rehabilitation work on a bridge in Kansas City and also the retrofitting of a sidewalk on a river bridge. A separate division of the company is now working for Branson on the Energy Performance contract.

GRA (Great River Associates): Their proposal stated some experience in bridge rehabilitations. They provided a conceptual detour route for the project and did an "artist rendering" of how the completed Veterans Bridge repairs would appear. They have done a significant amount of work in the Branson area but have only worked for Branson on one project - a sustainable parking lot design (for which they donated their time and efforts).

CDG: They listed 20 bridge rehabilitation projects they have done and said they have done "rehabilitation or replacement" of 100 bridges. The firm has never worked for Branson although their project manager was involved in the downtown railroad crossing upgrades done several years ago.

SKW (Shafer, Kline & Warren): They know more about the condition of the Veterans Boulevard Bridge than any other firm because of their work on the Bridge Engineering Assistance Program study. They obtained the $11,000 in funding for the evaluation from MoDOT which was very helpful and they did a great job on the investigation. They have worked on several rehabilitation and repair projects and won the 2009 Project of the Year Award for a bridge in Kansas City. They mentioned different levels of strengthening for the bridge depending upon the extent of aesthetic modifications the city desires for the bridge. They last worked for Branson a few years ago on the study of solutions to the package sewage treatment plants along Table Rock Lake and did excellent work.

MW (McDonald & Warger): This firm stated that they had a great deal of experience in bridge analysis and said they have done investigations on 1700 bridges. They have done design work on several bridge rehabilitation projects. They provided a very good description of the additional inspections that are needed as part of this project. They have never worked for Branson but did do the ADA ramp project design for MoDOT along Highway 76 last year.

CMT (Crawford, Murphy & Tilly): Their design work strengthening a bridge near the Springfield airport provided them similar experience to Branson's project. They provided the design work for Branson on the Lift Station #30 project for which the construction is just being completed.

CFS (Cook, Flatt & Strobel): They did list 10 bridges for which they have done "deck replacement and other repairs" over the past 15 years. They mentioned some details on detour signage for the project. They have not worked for Branson although they have done work for a developer on the design of the Branson Hills Parkway signalized intersections.

MCE (McClelland Consulting Engineers): They have teamed with a bridge expert that "designed repairs" for five bridges. They have never worked for Branson.

CITY OF BRANSON

Engineering/Public Works Department

110 West Maddux St., Suite 310 • Branson, Missouri 65616
(417) 337-8559 • Fax (417) 337-8181

July 25, 2011

Harold McCoy, P.E.
Allgeier, Martin & Associates
2820 S. Range Line Road
Joplin, MO 64804

Re: Request for Proposal
Engineering Services for the Veteran's Boulevard Bridge Repairs

Dear Harold,

The City of Branson is requesting engineering design proposals for the repair of the Veteran's Boulevard Bridge in downtown Branson. This 430 foot long bridge, originally built in 1931, spans over Roark Creek and the MNA Railroad. With an average annual daily traffic volume of over 12,000 vehicles per day, the two-lane bridge provides a major point of access for the downtown area. The bridge historically was owned by MoDOT, however in 2004 the city of Branson accepted the bridge from the state as part of an overall agreement on road maintenance issues. The December 2009 MoDOT biennial inspection report indicated that there are issues with concrete spalling and deterioration. It was recommended that the city have further reviews completed. In June 2011, a structural evaluation was done on the bridge by Shafer, Kline & Warren (SKW) through the MoDOT Bridge Engineering Assistance Program. Both of these reports are attached for reference.

This project includes the engineering design and preparation of plans, specifications and cost estimates for the repair of the bridge. This project is completely funded by the City of Branson without any funding from Taney County or MoDOT. The repairs, as recommended in the SKW evaluation include:

- Repair deck patches
- Repair deck girders delaminated areas
- Repair end and intermediate bents deteriorated sections
- Seal the existing deck below the sidewalk
- Replace the existing sidewalk with a new 6' sidewalk including new guardrail/barrier along the sidewalk
- Install new fenceing along sidewalk at correct height including taller section over the MNA Railroad
- Install new street lighting along west side of the bridge

Additional information or requirements of the design include the following:

1. The design work must include enough analysis of the existing structure to ensure that the existing girders have an adequate factor of safety to support the new wider sidewalk, lighting and fencing.

2. There is an abandoned water line suspended under the center of the bridge. This line has not been in use for many years and the city Utility Department has agreed that it can be removed. The design plans will need to provide information to the contractor to remove and dispose of this line. The

Utility Department may have some requirements for capping the exposed ends of the line and those requirements should also be included in the project scope.

3. It is assumed that the construction work can be expedited if the bridge is closed completely to traffic while the work above the deck is underway. For a complete closure, there will need to be a detour and signage plan implemented by the contractor and therefore these details will be part of the engineer scope to design. The "Skaggs Roundabout", a 5-legged 2-lane roundabout, is immediately north of the bridge and so the detour signage plans will have to factor that into the detour layout. It is desirable to minimize impacts to businesses located immediately north and south of the bridge.

4. For the work under the bridge, it seems apparent that the contractor will need to construct a causeway into and/or across Roark Creek to access the bottom of the bridge with the necessary equipment. Although the causeway construction methods and means may be left to the contractor, the design plans will have to provide requirements for the passage of water, navigation issues and other necessary details. The design engineers will need to coordinate with the US Army Corps of Engineers and any other entity having jurisdiction on the requirements for the project.

5. In 2006 the city constructed the all new Branson Landing Boulevard (BLB) Bridge approximately 400 feet downstream from the Veterans Boulevard Bridge. The BLB Bridge incorporated a few aesthetic elements that would be desired to be replicated as part of the Veterans bridge repairs, specifically the fence design, decorative form liner on the concrete and decorative street lights. The design firm will need to consider these elements and make a recommendation as to whether that can be included in the work or if the cost impact would be too much.

6. The BLB Bridge project included some wetlands impacts and some remediation of the disturbed wetlands. The map showing the wetlands determination in the area is included with this Request for Proposals and seems to indicate that wetlands will not be an issue with this project. The design consultant will need to confirm that assumption and if wetlands are an issue, include the handling of that issue within the design scope of work.

7. The railroad under the bridge is actually owned by the Union Pacific. They lease the line to the Missouri & Northern Arkansas Railroad. Typically, when work has occurred along the MNA Railroad, the railroad has stipulated that their personnel will provide any needed flagmen and that the City will pay that flagman cost. The design consultant will need to work with the railroad to obtain any necessary permits (which the city will pay for directly) and also determine the details for the flagman and then incorporate those requirements into the construction contract so that the contractor is aware of the costs and that they will be paying the railroad for those services.

8. As stated above, the bridge was built in 1931. In 1959 the bridge was modified to add the sidewalk. In 1984 the bridge had significant patching work done. All three sets of plans for these projects are included with this RFP as reference material. The city makes no guarantee as to the accuracy of these old plans.

9. There is limited public right-of-way surrounding the bridge. A city property map is attached for reference. If additional right-of-way, permanent easements or temporary construction easements are needed to complete this work, the design consultant will be responsible for all survey work necessary to develop the legal descriptions for these acquisitions. The city staff will do the actual right-of-way negotiations and obtain the property for the project before construction work starts. The survey work must include easement and/or right-of-way sketches for use in explaining the taking to the affected property owner. The area adjacent to the roundabout seems like a logical location for a construction staging area and this land is owned by the city with a long-term lease to a developer. A legal

description on this land to make it a temporary construction easement is unnecessary but if the design consultant determines that the land is needed for the bridge project, city staff will have to obtain permission from the lessee to use the property.

10. Several utilities are in the area and passing under the creek in the vicinity of the bridge. The design consultants will need to coordinate with the affected utility companies to locate their facilities and include that information on the plans.

11. The new sidewalk and all access for pedestrians must be designed in accordance with ADA regulations.

12. As stated above, it is desired to have the new street lights match the decorative street lights on the BLB Bridge. These lights were provided by Holophane. To minimize the need for parts storage, the lights on this bridge should also be Holophane brand. However, the city would like to utilize LED technology in these fixtures which is apparently a feature now available in this style of decorative fixture. The design consultant will need to ensure that the lighting meets the standards for bridge pavement illumination.

The final design services shall include calculations, construction drawings, specifications, final construction cost estimate, and the necessary steps to advertise, bid and award the construction contract.

The City will provide the "front-end" documents, prevailing wage rates, and "general provisions" to be incorporated into the contract. The consultant will prepare the special conditions and the technical specifications to be incorporated, along with the city-provided information, into the contract documents. The consultant will provide the city a PDF file of the plans and a PDF file of the specifications for posting on the city's website. The consultant will be available to answer questions from the contractors during the bidding phase and act as the source for plans and specifications to the bidders.

Once the project is under construction, city staff will handle the daily contract administration, inspection and pay requests from the contractor. The consultant will be expected to be available to answer questions, approve shop drawings, meet should unanticipated problems arise and lend technical support throughout the project, until accepted by the city. In order to ensure compliance with the contract documents and the design intent, it is anticipated the consultant will perform periodic site visits to observe the work in progress. At the completion of the project, the consultant will conduct a field review of all work completed by the contractor. At that time, the consultant will advise the city if the project was built in substantial conformance to the construction documents as well as the design intent of the consultant.

Upon completion of the project, the consultant will provide as-constructed plans in PDF format to the City.

The city has digital aerial photography and a 2-foot topographical data layer of this area in its Arc Info based GIS system. This data can be exported to the consultant in an AutoCAD DXF format for use in the preliminary design work. A field survey will be required to determine precise locations (horizontal and vertical) of existing facilities.

Proposal Submittal

In accordance with City of Branson Ordinances, the proposal submitted by your consulting firm must contain certain minimum information:

- Experience in the type of work covered by this RFP

- Your firm's history of completing the design of related projects on time and at/under budget.
- The name, number and qualifications of individuals of the firm and the geographic location of principal offices.
- The proposed schedule for the completion of the project by your firm.
- A general description of how the project is to be completed or conducted.
- Any other information that your firm feels is deemed to be relevant to the project.

The city of Branson recognizes that design firms in private practice must expend significant time and resources to respond to an RFP of this nature. Therefore, since the city of Branson already has each firm's qualifications on file for review, the city is setting a maximum proposal size for this RFP. All firms responding to this RFP shall limit their proposal submittal to a maximum of ten (10) single sided 8.5" x 11" sheets. This includes any graphics, exhibits or attachments. The city's selection committee will be aware of this size limitation.

The City of Branson's policies stipulate that the proposals be uploaded to the city's web site for use by the selection committee. Therefore, any confidential or proprietary information should not be included in the proposals.

If your firm is interested in submitting a proposal, we request that one (1) print copy of your sealed proposal and a PDF file on CD be submitted to the City of Branson by Tuesday, August 23, 2011, to the attention of Keith Francis, P.E., Assistant Director of Public Works, City of Branson, 110 W. Maddux, Suite 310, Branson, MO 65616. At that time, city staff will evaluate all proposals received and make recommendations to the Board of Alderman Capital Improvements Committee. That committee will review the staff's evaluation of the submitted proposals and, if a firm is not selected at that point, they may prepare a short list of firms to be interviewed and then, at its option, invite those organizations to appear at a designated time and place for an oral presentation/interview. The city reserves the right to select one or more organizations for interviews that appear best qualified to provide the services desired. The city review committee's recommendation is not binding on the city. After selecting a firm, the committee will make a final presentation to the Board of Alderman at their next regularly scheduled meeting. The design contracts will then be prepared and executed. If the city is unable to negotiate a satisfactory contract with the selected firm, negotiations with that firm shall be terminated and the city shall undertake negotiations with another of the qualified firms. If the city is unable to negotiate a satisfactory contract with the second firm, negotiations with that firm shall be terminated and the city will undertake negotiations with a third qualified firm.

If the city is unable to negotiate a contract with any of the selected firms, the city shall reevaluate the scope of services including reasonable fee requirements and again compile a list of qualified firms and proceed in accordance with the above selection procedure. The design contracts will then be prepared and executed.

The review committee and the city reserve the right to reject any or all qualification submittals or to waive minor defects or irregularities in any submittal. The city further reserves the right, without prior notice, to supplement, amend or otherwise modify this request for qualifications or otherwise request additional information from any or all applicants.

By submitting a qualification statement, the consultant thereby agrees that the city's decision concerning any submittal in any respect is final, binding and conclusive upon it for all purposes, and

acknowledges that the city, in its sole and unqualified discretion, may waive or deviate from the procedures and/or timetable outlined.

All materials submitted become the property of the city and may be available to the public. All costs incurred in connection with responding to the request for qualifications will be borne by the submitting organization. Please note that the City of Branson logo is a registered trademark as of November 4, 2002 and may not be used without the city's express written permission.

If you have any questions, or need any clarification please do not hesitate to contact me in the City of Branson Engineering Department at (417) 337-8559.

Sincerely,

David H. Miller

David H. Miller, PE
Director of Public Works

cc: Keith Francis, P.E. Assistant Director of Public Works

Proposal for Engineering Services for the

Veteran's Boulevard Bridge Repairs

for the
City of Branson, Missouri

HDR

August 23, 2011

Proposal

August 23, 2011

Mr. Keith Francis, P.E.
Assistant Director of Public Works
City of Branson
110 W. Maddux, Suite 310
Branson, MO 65616

RE: Engineering Services for the Veteran's Boulevard Bridge Repairs

Dear Mr. Francis,

HDR would like to thank you for considering our firm to provide engineering services related to the Veteran's Boulevard Bridge Repair project. HDR has a proven history of developing practical solutions for challenging projects such as this. HDR works closely with our clients to foster effective communication so that we can deliver the project that you expect. This relationship helps to eliminate rework, ensure that the projects are delivered on time and under budget.

HDR's Overall Design Approach

Clients and consulting engineers know that a successful project must have capable and trusted partners advocating for the project, yet, it can not be taken for granted that this is always the case. It takes effort on both sides, but the burden of developing this relationship lies primarily with the consultant's Project Manager. HDR will be engaged and responsive to any and all of your requests, telephone calls, e-mails and meetings. HDR employee owners work hard to build trust and rapport. This dedication has led to HDR being regarded as a trusted advisor by many of our clients. Immediately upon selection, HDR will partner with the City to develop a proper scope and commensurate fee for completion of this project. The fee proposal will be clear, concise, and completed quickly. An initial scoping meeting is encouraged to make certain that our Project Manager and design staff are fully engaged and communicating effectively with City to ensure that your goals for this project are met.

Project Understanding

The Veteran's Boulevard Bridge is a nine span reinforced concrete structure originally constructed in 1931 with deck modifications to include the addition of a sidewalk in 1951 as well as a new wearing surface and barrier modifications in 1989. There is some discrepancy in the overall bridge length as the original bridge plans show 452'-6" with hand written mark-ups totaling 462'-6". The 2009 MoDOT biennial bridge inspection also notes the total bridge length as 462 feet. The bridge deck is currently 29'-10" wide with a 26'-6" roadway width and a 3'-10" cantilevered sidewalk.

The most recent bridge inspection report, completed in 2009 by MoDOT, lists the superstructure and substructure as satisfactory condition and good condition, respectively. This is in general agreement with the Structural Evaluation recently completed in 2011.

City of Branson Project Goals: Based on the RFP the design must address the recommended repairs put forth in the June 9th, 2011 structural evaluation and specifically address the following issues:

- ***Repair deck patches/ Repair deck girders delaminated areas/ Repair end and intermediate bents deteriorated sections:*** The level of deterioration throughout the existing bridge is minor and sporadic. Considering the age of the structure it is in relatively good condition, proper maintenance can go a long way in extending its life. HDR has developed details for similar concrete repairs on numerous structures in the past, most notably 23rd Street Viaduct and James Street in Kansas City, I-44 over River Des Peres in St. Louis as well as the Miami and Glasgow Missouri River Bridges for the Missouri Department of Transportation.
- ***Seal the existing deck below the sidewalk:*** The main areas of sidewalk deterioration are located in the scupper openings. These areas are continuously

shaded which can promote rusting of the reinforcing steel and lead to concrete spalling. Sealing the deck in these locations can help to stop this intrusion of water and chlorides and greatly slow the rate of rusting and subsequent spalling of concrete. This is not an uncommon approach on a rehabilitation project. HDR is familiar with developing plans and specifications to address this condition.

- ***Replace existing sidewalk with a new 6' sidewalk including new guardrail/ barrier along the sidewalk:*** The existing sidewalk is exhibiting moderate signs of deterioration and the existing 3'-10" width is inadequate for proper pedestrian use, especially with regards to ADA requirements. The proposed 6'-0" sidewalk will provide approximately 5'-5" of clear width between the back of the barrier and the face of the decorative fence which is sufficient in addressing pedestrian and ADA concerns.

  There are potential problems in connecting the proposed 6'-0" sidewalk to the existing bridge deck. Similar to the existing condition, the proposed sidewalk will need to be cantilevered off of the west edge of the bridge deck. As a result of the additional weight of the sidewalk, larger pedestrian loading and increased cantilever distance there is some concern with relying on epoxy anchors cast into the existing deck to resist this loading. MoDOT has experienced some issues with cantilevered sidewalks if not properly designed and detailed. As a result HDR would recommend the addition of support brackets attached to the exterior of the outside girder to assist in supporting the sidewalk. This approach will add additional support and greatly reduce the loading applied to the epoxy anchors in the deck.

  Another approach that should be considered in design is the use of a carbon fiber sidewalk decking; this material can greatly reduce the dead load applied to the structure resulting in an increased capacity to handle pedestrian loading and a reduced impact on the vehicle load rating of the structure. The decking is composed of carbon fiber planking with an epoxy resin surface; the planks are bolted to steel brackets attached to the exterior face of the outside girder. MoDOT utilized this approach recently on the recently completed bike path added to the US54/ US63 Missouri River Bridge in Jefferson City.

- ***Install new fencing along sidewalk at correct height including taller section over the MN&A Railroad:*** The existing chain link fence along the west side of the bridge does not meet current railroad standards. Per the BNSF/ UPRR "Guidelines for Railroad Grade Separation Projects" the minimum vertical fence height should be 10 feet. This height is required to make it difficult for vehicles and pedestrians to throw objects over the side of the bridge onto passing trains or railroad personnel below. The increased fence height shall extend between the limits of railroad right-of-way. Per discussions with the City, the proposed fencing should match the decorative fencing on the Branson Landing Boulevard Bridge immediately downstream. In addition to fence height restrictions, the railroad guidelines also limit the opening in architectural fencing to 2 inches and state that it shall be designed to limit climbing. As discussed later in this proposal HDR has worked regularly with the M&NA RR and is a national service provider for UPRR having assisted in the drafting of the grade separation guidelines.

- ***Install new street lighting along the west side of the bridge:*** Lighting on the existing bridge is mounted behind the concrete curb and within the limits of the sidewalk further limiting the narrow area available to pedestrians. HDR recommends that the decorative light poles be mounted on top of the proposed concrete barrier curb between the roadway and sidewalk. This location will greatly simplify installation as the barrier curb has the necessary height to accommodate the required anchor bolts and adequate area for placement of the required electrical conduits and junction boxes.

  Placing the light poles along the outside edge of the 6'-0" (similar to Branson Landing Boulevard Bridge)sidewalk will require a specialized system for the anchor bolt embedment due to the 6" sidewalk thickness and complicate placement of the

associated conduit system. Though more difficult and expensive, HDR is capable of developing these details if desired by the City.

Alternate Approach

While the most recent structural evaluation, and the associated repairs, adequately address the bridge deficiencies noted in the most recent field inspections, the report does not address the most evident structure deficiencies noted in 2009 MoDOT report. The deck geometry and bridge railing are noted as "basically intolerable" or "does not meet current standards". To fully address these issues HDR would recommend that the City investigate a total superstructure replacement, if funding is available. HDR also understands that the City is looking at a comprehensive streetscaping project for downtown Branson. With the current construction of the diverging diamond interchange at US 65, completion of the "Skaggs Roundabout" and the proposed streetscaping project, Veterans Boulevard has the possibility of becoming a gateway to the downtown business district and the Branson Landing. The proposed repairs and sidewalk work will not provide an aesthetic appearance in harmony with the future surroundings of the project site. The bridge deck will be a mixture of the existing thrie beam rail along the east edge (visible from Branson Landing Boulevard) and decorative barrier and fencing along the west. Full superstructure replacement will allow the finished bridge deck to closely mirror the Branson Landing Boulevard Bridge and provide a continuous aesthetic appearance in to the heart of downtown. The substructure, following repairs, could also be sealed with a tinted sealer to closely match the color of the new superstructure to further improve the aesthetic appearance of the overall bridge.

Superstructure replacement will allow the construction of a 28'-0" roadway consisting of 12'-0" lanes and 2'-0" shoulders in each direction. The resulting 14'-0" lane is the minimum recommended width for dual vehicle and bicycle use. Including barriers, this will result in a 30'-8" deck width. The 6'-0" sidewalk will be cantilevered from the deck utilizing more standard details, with rebar cast monolithically with the deck concrete, and located behind the west barrier as requested. Due to the limited span lengths, preliminary review has shown that the deck can be supported on MoDOT Type 2 prestressed concrete I-girders. The above cross section actually results in a decreased superstructure dead load of 1500 lbs./ft. over the existing superstructure. Thus superstructure replacement will reduce the load applied to the existing substructure elements which should itself help to increase the life expectancy of the bridge. Based on the Structural Evaluation Report, the estimated cost of the bridge repairs and new sidewalk is given as $986,200. Though HDR believes this cost is overly conservative, the estimated cost of the full superstructure replacement is under $2,000,000. The improved appearance, reduced loading, increased longevity and decreased long term maintenance should all be taken into account when comparing these two values.

The following addresses the additional information requested by the City:

1. **Ensure the existing structure has adequate factor of safety to support new loads:** The existing bridge will need to be load rated to include both the superstructure and substructure to ensure that it can safely support the proposed loads. The design team should investigate the full range of solutions to develop the best overall project. To accomplish this, the design team will need to have effective coordination with the City to ensure that project goals and milestones are being met. Members of HDR's design staff have prepared this type of analysis on previous bridge rehabilitation projects, most notably the Miami and Glasgow Missouri River Bridges.

2. **Plans shall have adequate information for removal of abandoned water line:** HDR has an excellent track record of working with local water departments and other city utilities. Most recently having completed the Tucker Boulevard Reconstruction and the Grand Avenue Viaduct Replacement for the City of St. Louis. Tucker Boulevard involved numerous water line relocations while Grand Avenue resulted in the capping and significant relocation of a 30" water main to include boring beneath UPRR and Metro light rail facilities. HDR prepared the design plans

for the water main reloactions and utilized standard water department specifications

3. **Design shall properly address traffic issues:** Should the City decide to proceed with the project as described in the RFP, it may be possible to maintain one lane of traffic on the structure throughout construction. To limit left-hand turning movements (across traffic) HDR would recommend that the northbound traffic be maintained on the bridge with southbound traffic diverted through the "Skaggs Roundabout" to Branson Landing Boulevard and Commercial Street. This arrangment will maintain direct northbound access to the Skaggs Hospital for emergency vehicles.

   Should the City pursue superstructure replacement, this alternate will require full road closure due to the narrow width of the existing bridge deck. Again, Branson Landing Boulevard would be the most direct detour route. HDR roadway and traffic staff are extremely familiar with the latest signing requirements. They also designed the first roundabout constructed by MoDOT and assisted MoDOT with the development of their round-about guidelines. This knowledge will help to ensure that the signage on this project is adequate to address the traffic concerns that may develop during construction. HDR traffic engineers are also capable of looking at the existing roadway network to include signalized intersections to see if there are timing improvements that can be made to move traffic more efficiently during the bridge construction work.

4. **Plans shall adequately address constructability and agency coordination:** HDR regularly works on bridge replacement/ rehabilitation projects and site access is always a consideration. Construction of a causeway across Roark Creek is an issue that will need to be addressed early in the design as such an element will need to be permitted and approved by the Corps of Engineers (COE) as part of the 404 permit process. HDR has local hydraulics engineers that regularly work with our bridge staff to determine and limit flood plain impacts. The design will address issues related to providing appropriate access to the contractor.

   If the consultant does not develop a constructible cost-effective design, the contractor will submit excessive VE proposals resulting in a loss in project savings to the City.

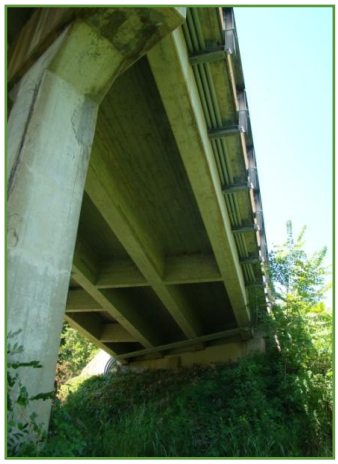
5. **Plans shall incorporate fence design as well as decorative form liner and street lighting similar to the Branson Landing Boulevard Bridge:** HDR has extensive experience with incorporating aesthetic enhancements into a project. Both the Tucker Boulevard Reconstruction and the Grand Avenue Viaduct Replacement projects include millions of dollars worth of enhancements including: extensive use of concrete form liners, decorative fencing (including fencing over UPRR tracks), decorative light fixtures, elaborate landscaping, stamped concrete, decorative towers, the list is quite extensive. Though these examples show the extreme extent with which aesthetics can take, HDR understands the simple approach that the City desires on this project.

6. **Designer shall confirm permitting requirements:** The Local Public Agency (LPA) process provides sound guidelines, and a structured process for obtaining the required permits and necessary environmental clearances. This ensures projects have a positive effect not only on the City of Branson, but also on the surrounding environment and affected property owners. HDR has internal environmental and resource management staff to assist in completing the required documentation and in communicating with the regulating agencies, such as MoDOT, SHPO, MoDNR, U.S. Fish and Wildlife, and U.S. Army Corps of Engineers. This guidance helps to ensure that the environmental/ cultural submittals are clear and contain all of the pertinent information, thus speeding the approval process and eliminating the possibility of costly and time-consuming resubmittals.

   Since the project is utilizing no federal funding a COE 404 permit will be the main concern in regards to permitting, though a Section 106 historical clearance may also be required due to the nature of the rehabilitation and the age of the structure. COE review may also require comment from MoDNR and U.S Fish and Wildlife on endangered species prior to awarding a permit. Due to the limited nature of the project , it is anticpated that a nationwide permit will be authorized by the COE.

7. **Designer shall coordinate with required railroad agencies:** The north end of the bridge spans over tracks owned by UPRR and leased by Missouri & Northern Arkansas (M&NA), thus HDR's experience working with both UPRR and M&NA will be crucial to the timely completion of both the design and ultimately construction. As a preferred service provider for the UPRR, HDR performs a tremendous amount of consulting for the UPRR throughout the United States. Our company recently served as Union Pacific's onsite representative on the kcICON Project in Kansas City and has unparalleled relationships with UPRR's local projects representative(s). These relationships will help HDR coordinate with the railroad at all levels to obtain right of entry permits and timely preliminary and final plan reviews from the UPRR. In addition, HDR's St. Louis office is located just minutes from the UPRR regional office where the company's management staff, with oversight of this project, is located. HDR will set up and facilitate early coordination and partnering meetings with UPRR representatives to set the parameters for determining appropriate engineering solutions over the UPRR tracks.

In addition to strong relationships with UPRR, HDR has recently completed four bridge replacement projects for MoDOT District 7 involving structures spanning tracks owned by UPRR and leased by M&NA in Vernon, Barton and Jasper counties. HDR understands that M&NA is owned by Rail America and often outsource their plan review to other consultants across the country. HDR is familiar with this process, having gone through it several times, and has developed a solid working relationship with these reviewers. This familiarization helps to speed the review process by not only knowing what the reviewers expect but also by knowing who to contact if issues arise.



8. **Designer shall verify accuracy of existing information:** As with any design project involving an aged structure, HDR will work with our surveyors and inspection staff to verify the accuracy of the existing bridge plans. For example, the bridge length discrepancy mentioned earlier in this proposal will be resolved based on actual survey data.

9. **Designer will responsible for all survey work required to develop legal descriptions:** Based on familiarity with previous projects of similar scope, minimal R/W or Temporary Construction Easement (TCE) will likely be required. This R/W or TCE will be necessary to allow the contractor to have access to the structure and have enough room for rehabilitation of the current bridge. Our design team is sensitive to the concerns of local property owners and will take appropriate steps to limit the impact of this project on adjacent properties. HDR will work closely with the City to determine the best use of available City property adjacent to the project site.

10. **Designer will be required to coordinate with affected utilities:** Utility impacts can be a major part of any roadway/ bridge project and require the utmost scrutiny during design to alleviate any surprises during construction. HDR has successfully coordinated with utilities on several projects in which partnering sessions were used to brainstorm ideas of relocation and to help minimize cost and time during construction. HDR's approach includes: conducting utility coordination meetings, supplying detailed plans as early as possible and performing potholing to accurately locate facilities. It has always been HDR's philosophy to make every attempt to design around known utilities to avoid costly relocations.

    Based on the recent site visit there are three conduits which run beneath the northern end of the bridge, turn south and then run beneath the eastern edge of the bridge deck. The proposed

rehabilitation and sidewalk work should have little impact on these utilities beyond taking precautions to limit damage during sidewalk demolition and rehabilitation work. If the City would pursue the full superstructure replacement, more significant steps need to be taken to either relocate or temporarily suspend the affected utilities on the remaining substructure elements. HDR has addressed both of these approaches on past projects and will work closely with the utility company during design to limit any adverse impacts.

11. **Plans shall adequately address ADA regulations:** While adding a widened sidewalk section will address the pedestrian and ADA compliance issues on the existing structure, HDR feels that the project must also address the northern roadway approach. As the sidewalk follows Veteran's Boulevard south from the "Skaggs Roundabout" the surface changes from concrete to asphalt and the width is substantially reduced due to the placement of the roadway guard rail. There is also an extremely steep side slope immediately adjacent to the back edge of the sidewalk in this area which represents a significant safety hazard to both healthy and disabled pedestrians. HDR would recommend the project (regardless of which alternative is chosen) include reconstruction of this portion of the sidewalk to provide a continuous concrete surface and widened sidewalk to maintain a minimal clear distance of 4'-0" behind the protective guard rail. This additional width will require the construction of a small retaining wall which should be topped by fencing, similar to that proposed for the bridge to improve pedestrian safety.

12. **Produce Quality Design Plans & Special Provisions:** The HDR team assigned to your project has a proven track record of providing high quality plans and comprehensive special provisions on large, complicated and fast-tracked projects. HDR understands that our plans are the only lasting record of our performance on a project and will become a legacy of our firm with our clients. Every precaution is taken to ensure that legacy, and the City can be confident this trait will continue on this project. These precautions begin with hiring the most qualified people, creating a good work environment and completing Quality Assurance and Quality Control Reviews to ensure that our plans are of the highest quality and accuracy. Our Quality Control reviews will be lead by Cory Imhoff, P.E., Senior Project Manager. Mr. Imhoff has worked on a number of very complicated bridge rehabilitation projects throughout Missouri to include: the 23rd Street Viaduct and James Street Rehabilitation Projects for Kansas City and the Miami and Glasgow Missouri River Bridge projects for MoDOT. These projects involved extensive repair and modifications details (to include superstructure replacement in some cases) similar to those required for the Veteran's Boulevard Bridge. His experiences with such complicated projects will provide our team with unique insights and guidance as part of his quality control reviews and will guarantee that the City will receive the best plans possible.

13. **Respond Promptly and Effectively During Construction:** Having completed relatively large rehabilitation projects, the HDR personnel assigned to your project understand how important it is to be extremely responsive during construction of your project. Visual inspections only reveal what can be seen on the surface of the structure, it is not uncommon for unforeseen issues to be uncovered and revealed during construction. These unforeseen issues require immediate response by the Engineer of Record. Anything that is a surprise to a contractor working over and around railroad tracks owned by UPRR can result in large delays and additional costs. Our design will be comprehensive and designed to limit contractor risk, but there are always issues that arise during construction no matter how thorough the inspection and construction documents.

It is also understood, that the City of Branson is funding 100% of the project cost with no outside financial support from Taney County or MoDOT. Therefore, HDR understands that every dollar spent or saved on this project has a direct impact on the City of Branson. Getting the most for every dollar spent is goal that HDR can help you achieve.

Staff Availability & Schedule

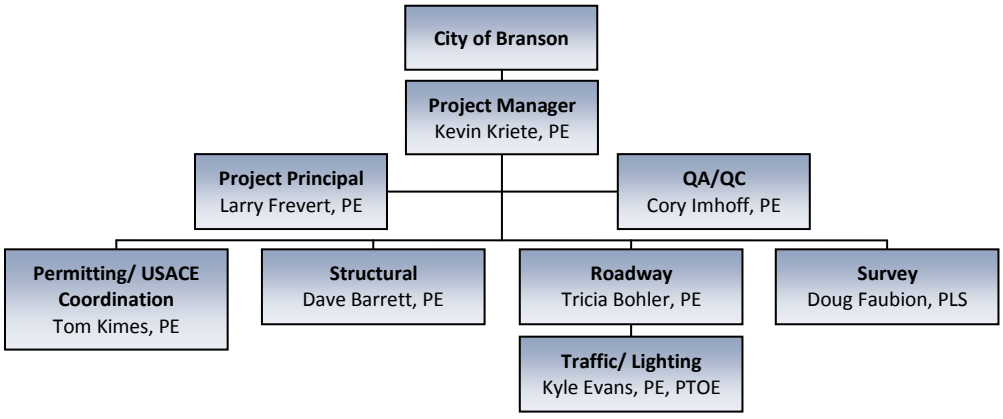
With over 20 local transportation engineers HDR has the staff available to meet your schedule. This project, regardless of whether it is a sidewalk reconstruction or full deck replacement, is relatively straight forward and will not require a large design effort. An early 2012 letting date is anticipated for this project which fits well with our current workload. Should a more expedited schedule be desired HDR has the additional staff to meet your expectations.

HDR understands the importance and impact the tourist season has on the City of Branson. Therefore, HDR's design schedule will allow for construction to begin in the early 2012, once funding is available. The bulk of the design work for this project should be complete by the end of this year. HDR anticipates a project schedule as outlined below to provide final plans and special provisions depending upon which alternate is chosen.

It is important to realize that the overall design schedule is not controlled by the length of time to complete the actual design and plan preparation but is largely impacted by the railroad review and approval process. Thus, as noted in the above table there is only a one month difference between the design timeframe for replacing the sidewalk versus full superstructure replacement even though there is a large discrepancy in the amount of design effort. The above schedule accounts for a 30 day review period. HDR's previous working experience with both the UPRR and M&NA RR can help to expedite the review and approval process and possibly further shorten the design schedule.

Task	Sidewalk/ Rehabilitation	Superstructure Replacement
Notice to Proceed (assumed)	9/15/11	9/15/11
Preliminary Bridge Plans	10/15/011	10/15/11
Unsigned Plans, Special Provisions & Estimate	11/15/11	12/15/11
Final Plans	1/15/12	2/15/12
Letting	2/15/12	3/15/12

HDR Project Team: HDR has local transportation staff with extensive bridge rehabilitation experience. This staff will be supported by additional technical experts to address all of the project challenges and deliver a project that exceeds your expectations. The following is a brief listing of the background and relevant experience of the key personnel who comprise the core of our project team:



Company Information
Name: HDR Engineering, Inc.
Project Manager: Kevin Kriete, PE
Office Locations
Headquarters: Omaha, NE
Missouri Locations
Forsyth
Kansas City
Lee's Summit
Osage Beach
Springfield
St. Charles
St. Louis

Kevin Kriete, PE, Project Manager - Mr. Kriete has more than 17 years of structural engineering and project management experience for numerous agencies throughout the St. Louis metro area as well as state and federal agencies across the United States. Kevin's experience includes an extensive list of projects involving both the inspection and design of roadway, rail, light rail and pedestrian structures. These projects have involved all types of project delivery methods from typical design-bid-build to design-build and give Mr. Kriete a unique combination of design and construction experience with which to approach this project. Over the past 12 years Kevin has successfully managed the completion of over 30 bridge replacement/ improvement projects utilizing the MoDOT LPA guidelines for a wide range of counties and cities. He has an excellent track record with MoDOT and other public agencies of delivering high quality plans on projects with fast track schedules. Mr. Kriete's past experience in the design and preparation of bridge rehabilitation/ replacement projects along with his familiarity and history of working along side local public

agencies make him an ideal candidate to deliver this project. His primary objective as Project Manager will be to establish and maintain team direction and to foster close communication with the City of Branson Project Manager to ensure that you are getting the project that you want.

Larry Frevert, P.E., brings more than 40 years of experience in the fields of municipal and state transportation engineering. Mr. Frevert is a Past National President of the American Public Works Association and as such he maintains regular contact with public works departments across North America and has firsthand exposure to the best public works management practices.

David Barrett, P.E., will serve as the Structural Design Leader. Mr. Barrett has over 9 years of structural design and management experience. Dave has been the design engineer for a number of recent MoDOT projects including "Safe and Sound" replacement and re-decking projects over M&NA railroad tracks throughout District 7, as well as the Glasgow and Miami superstructure replacements over the Missouri River in District 2. David's familiarity with UPRR/ M&NA design and plan requirements make him an ideal candidate to lead the structural effort on this project.

Tom Kimes, PE, will assist with Permitting and USACE Coordination. The City of Branson will benefit from Mr. Kimes' extensive experience working with the Corps of Engineers on a variety of projects and permitting activities. As a former Corps employee, he understands Corps missions and priorities as well as Corps procedures. Mr. Kimes has worked with the Corps of Engineers on a number of projects, most recently representing the interests of the City of Riverside, Missouri on the Lower Line Creek stream stabilization project.

Tricia Bohler, PE, will serve as the Roadway Design Leader. Ms. Bohler has over 16 years of design and project management experience. Her design specialties include civil site design, accessibility and urban roadway design. Ms. Bohler has managed several multi-discipline projects, including Chesterfield's $10 million Central Park. This project included 4 HDR offices, 9 technical disciplines, and 3 subconsultants. Tricia effectively integrates complex design features into overall construction packages that meet the project and client requirements, as well as budget and schedule expectations.

Kyle Evans, PE, PTOE, will provide traffic engineering services. Mr. Evans is a traffic engineer with over 12 years of experience in the areas of traffic operations, transportation planning, and roadway/traffic design. Mr. Evans has served as a project engineer for transportation corridor studies, as well as several traffic impact studies for residential, commercial, and mixed-use centers. He has experience applying transportation modeling and traffic simulation to the analysis of signalized arterials and freeway corridors.

Doug Faubion, PLS, will act as the Survey Lead. Mr. Faubion will manage the surveying work for the project. Doug led the surveying effort for the recently completed Route 71 projects and the four Safe and Sound superstructure replacements in District 7. Doug works for HDR out of our Forsyth, Missouri office.

HDR Relevant Project Experience

HDR has successfully completed designs for numerous projects with similar issues. These projects often included complex design requirements that were successfully addressed under tight schedule constraints.

The table below highlights a few recent projects listing design schedules and estimated construction costs compared to actual values for a wide range of projects:

Project	Estimated Design Schedule	Actual Design Schedule	Estimated Construction Cost	Actual Construction Cost
Whiskey Creek Bridge, Franklin County, MO	120 days	120 days	$288,582	$229,877
Sapsucker Road Bridge, Franklin County, MO	120 days	120 days	$249,257	$189,780
Route 763, MoDOT, Columbia, MO	11 months	11 months	$14.9M	$13.9M
Route 367, MoDOT, St. Louis County, MO	48 months	48 months	$45.0M	$44.9M
Interstate Drive Corridor Preservation/ Design, Wentzville, MO	48 months	48 months	$3.4M	$2.29M
Mid Rivers Mall Drive Extension, City of St. Peters, MO	12 months	12 months	$2.9M	$2.2M
Heartland Road, Heartland Regional Hospital, St. Joseph, MO	24 months	25 months	$2.0M	$1.9M
West Gate Access Road, USACE, Fort Leonard Wood, MO	17 months	12 months	$24.1M	$24M
Chambers Road Improvements (as part of the Route 367 Improvements project), MoDOT, St. Louis County, MO	48 months	48 months	$2.1M	$2.2M

Proposal

The following project summaries are related to projects with recent experience directly relevant to the Veterans Boulevard Bridge:

23rd Street Viaduct Rehabilitation, Kansas City, MO
HDR provided engineering services for the City of Kansas City, Missouri, for a detailed inspection and report, development and evaluation of rehabilitation options, and rehabilitation plans for the 23rd Street and Wyoming Street Viaducts. The 23rd Street Viaduct, constructed in 1920, is a 13-unit, 1686-foot-long concrete deck girder and structural steel girder bridge. The Wyoming Street structure is a 5-unit, 465-foot-long concrete deck-girder bridge.

HDR's inspection report summarized the extensive cracking and spalling in the concrete superstructure and substructure. Ground penetrating radar was used to delineate the deck delamination of approximately 40% of the deck area. The report included an evaluation of the structure and six repair options that incrementally increased the level of repair from a deck and joint repair solution to a total viaduct replacement. The proposed repair option included replacing portions of the deck, replacement of steel girder spans, expansion joints, bearings and repairing the concrete substructure.

Route 240 Missouri River Bridge, Glasgow, MO HDR designed a replacement structure for the Route 240 Bridge over the Missouri River at Glasgow, Missouri. HDR previously performed a detailed inspection of the bridge and provided details for immediate repairs as well as rehabilitation options to keep the bridge in service for 50 years. As the project unfolded, it became apparent that rehabilitation of the bridge for an extended service life was not economically feasible.

HDR worked closely with the MoDOT Bridge Division to develop conceptual level designs for an affordable bridge replacement option. Ultimately MoDOT elected to utilize the existing substructure and have HDR design a new steel plate girder superstructure. In an attempt to limit the length of closure of the bridge to one construction season, MoDOT let the bridge in September of 2007. In order to meeting this letting date, HDR performed the final design, plan preparation and specifications in 15 weeks.

Route 41 Bridge, Miami, MO HDR designed a replacement structure for the Route 41 bridge over the Missouri River at Miami, Missouri. HDR previously performed a detailed inspection of the bridge and

provided details for immediate repairs as well as rehabilitation options to keep the bridges in service for 50 years. As the project unfolded, it became apparent that rehabilitation of the bridge for an extended service life was not economically feasible. HDR worked closely with the MoDOT Bridge Division to develop conceptual level designs for affordable bridge replacement option. Ultimately MoDOT elected to utilize the existing substructure and have HDR design a new steel plate girder superstructure.

MoDOT, Brownville Bridge (Route 136) over the Missouri River HDR recently completed an in-depth inspection, load rating and rehabilitation plans for the Brownville Bridge over the Missouri River. This work is being led out of the HDR-Kansas City office with St. Louis and Omaha staff providing both inspection and analysis support. This project includes redecking and repainting the main span truss and approach span girders, performing miscellaneous structural steel and

substructure repairs and replacement of a bent under traffic. The project requires a staged construction approach to maintain traffic.

MoDOT Route 71 over the M&NA Railroad – Bridges B0561 & B0562 (SAS), Vernon County, MO HDR provided surveying, geotechnical analysis and preliminary and final roadway and bridge design to replace two sub-standard bridges over the M&NA railroad. The three span (92'-102'-92') prestressed I-girder structures carry a 38' roadway. In an effort to limit the profile grade rise while still accommodating the railroad's vertical clearance requirement, precast NU girders were utilized. All bents are skewed 45 degrees with integral end bents and open column intermediate bents with collision walls on pile cap footings.

MoDOT Route 71 – B0563 over the M&NA Railroad, B0565 over Coon Creek and A27012 over the BNSF Railroad (SAS),Barton & Jasper Counties, MO HDR provided surveying, geotechnical analysis and preliminary and final roadway and bridge design to replace a sub-standard bridge over the M&NA railroad and an adjacent bridge over Coon Creek. An additional bridge over the BNSF railroad was rehabilitated to provide a new deck and modify the end bents to act integral. The three span (66'-102'-66') railroad overpass consisted of shallow continuous steel girder superstructure selected to limit the profile grade raise while meeting the railroad's vertical clearance requirements. All bents were skewed 45 degrees with integral end bents and open column intermediate bents on pile cap foundations. The four span (81'-81'-81'-65') creek crossing consisted of prestressed concrete girder spans on integral end bents and open column intermediate bents on spread footings skewed 30 degrees.

MoDOT Route 171 over the M&NA Railroad – Bridge B0567 (SAS), Jasper County, MO HDR provided preliminary and final design of the three span (85'-110'-85') continuous composite plate girder structure. All bents are skewed 46 degrees. The substructure consists of two integral end bents on pile foundations and two intermediate bents consisting of round columns and collision walls supported on pile cap footings (Bent 2) or spread footings (Bent 3). Structure has a 38'0" roadway.

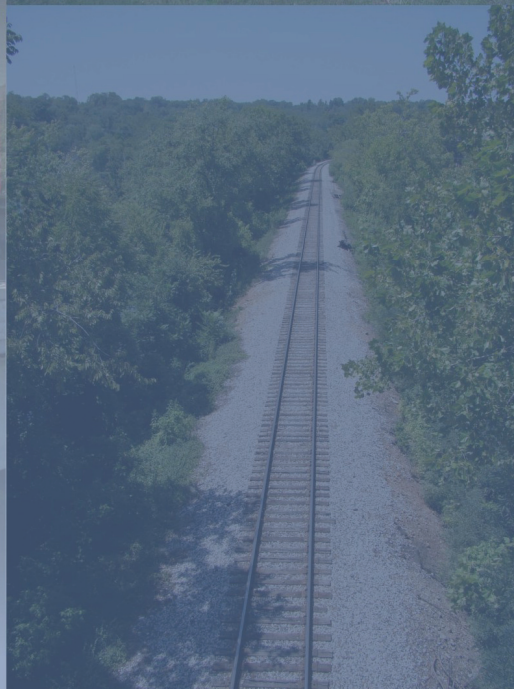
MoDOT, District 7 Superstructure Replacements (SAS), Dade / Jasper Counties, MO HDR provided surveying, roadway design and bridge design to replace the superstructures on four deteriorating bridges in MoDOT District 7. All of the existing structures were built in the 1960s with precast adjacent U-Beams with asphalt overlays. The superstructures were removed and replaced with precast prestressed adjacent voided slab beams. The adjacent voided slab beams were overlaid with waterproofing membranes and asphalt overlays.

I-44 over River des Peres, St. Louis County, MO HDR prepared final plans for redecking the bridges carrying eastbound and westbound I-44 over the River des Peres. The project involved redecking of both structures, miscellaneous substructure repair, end bent and retaining wall modifications, resetting bearing devices, and new approach slabs. Bridge A23946 is a four-span (67'-115'-115'-82') continuous composite steel plate girder bridge carrying westbound I-44 over the River des Peres. The bridge is skewed 20 degrees with a roadway width of 67'-9". The substructure consists of multi-column intermediate bents on pile foundations. Bridge A23947 is a two-unit structure consisting of a four-span (44'-56'-56'-44') continuous composite wide flange beam unit and a four-span (86'-111'-119'-82') continuous composite plate girder unit. This bridge carries eastbound I-44 over the River des Peres. The bridge is skewed 20 degrees with a roadway width of 66'-1". The substructure consists of multi-column intermediate bents on pile foundations.

HDR values our relationship with the City of Branson and appreciates the opportunity to submit our proposal on this project. The team we have presented above has the expertise and availability to complete this project within your prescribed budget and schedule. We look forward to discussing this project in more detail and getting started as soon as possible.

Sincerely,
HDR Engineering, Inc.

Kevin Kriete, PE
Project Manager



August 23, 2011

David H. Miller, PE
Director of Public Works
110 West Maddux Street, Suite 310
Branson, MO 65616

Subject: Engineering Services for the Veteran's Boulevard Bridge Repairs

Dear Mr. Miller:

Walter P Moore is pleased to submit our team's qualifications to the City of Branson for this bridge repair project. We feel the team we present to you has a long history of successful designing, restoration, rehabilitation and renovation projects. Our goal is to help you maximize the return on your investment. Together, we can offer cost-effective solutions to common or unique restoration challenges, resulting in optimization of concurrent technical activities for a quick project turnaround.

Experience & Skill

Walter P Moore has specialized expertise in the evaluation and repair of structures that are subject to ongoing deterioration - particularly corrosion related damage. We have specialized equipment to study corrosion potential, corrosion rates, and concrete delamination for existing bridges. We have most recently deployed some of these tools to investigate the extent of corrosion damage in highway bridges, coastal high-rise structures, stadiums, parking garages, and underground tunnels. The results of these investigations have enabled us to prepare well-defined construction documents to effectively repair structural deterioration.

SCI Engineering is a multi-discipline professional consulting engineering firm offering services during all phases of projects – from development and design through final construction. SCI provides services that include: geotechnical, construction, environmental, natural resources, and cultural resources. The company's staff includes geotechnical engineers, geologists, archaeologists, biologists, environmental scientists, construction inspectors, and engineering technicians. SCI has provided professional consulting engineering services on a wide range of projects in Missouri for numerous municipalities and public agencies.

CJW Transportation Consultants, LLC consists of professionals who work independently as well as collectively to provide a full range of professional services in transportation and civil engineering. The goal of CJW is to specialize in the design of public and private infrastructure with a mission to provide engineering solutions. CJW was formed specifically to provide superior services to public agencies. CJW is small and flexible with the ability to conform quickly to the ever changing demands of a project for successful design engineering, consulting, and project management.

Bowman Bowman Novick (BBN) is a multi-discipline design firm with offices in Kansas City, Missouri and Manhattan, Kansas. Our work integrates architecture and landscape architecture with culture and environment to create facilities and places of lasting quality and significance. BBN brings to the project team a wealth of experience in urban planning and design including: bridge aesthetic enhancements, streetscape design, and community and facility entry features.

Bridge Restoration

Extreme environmental conditions and repetitive vehicular loading can have adverse effects on highway bridges. Without proper management these conditions can decrease a bridge's life expectancy. A majority of our nation's bridges were built to last for 50 years and many are prematurely deteriorating and are approaching the end of their service life. Walter P Moore provides evaluation, testing and repair services for vehicular bridges to increase their life span and restore their structural integrity. Our "repair first" approach focuses on bridge restoration with an emphasis on public safety, longevity, and economy of our repair solutions.

920 MAIN STREET, 10TH FLOOR
KANSAS CITY, MISSOURI 64105

PHONE: 816.701.2100 FAX: 816.701.2200

WWW.WALTERPMOORE.COM

Professional Qualifications

The Walter P Moore team will be led by Jerry Nachtrab, P.E., a Principal in Walter P. Moore's Kansas City Office. Mr. Nachtrab's role as Principal-In-Charge is to resource the entire team to ensure the consulting work product is high quality, and delivered to you in a timely manner. The team proposed for this project is comprised of people who have experience in repair and restoration of highway bridges and similar structures. Qualifications of our key team members follow:

Jerry Nachtrab, P.E. brings more than 37 years of professional experience to his role as Principal-in-Charge. He has served in a similar role on numerous high profile projects of similar complexity and scale. Jerry has directed the design for site improvements, sanitary sewer extensions and improvements, industrial water supply and distribution systems, flood control projects, levees, harbors and waterways, roads and streets, and state highways.

Mark E. Williams, Ph.D., P.E., is a Senior Associate in Walter P Moore's Houston office in the Structural Diagnostics Services Group. Dr. Williams will serve as the Bridge Expert and has 11 years engineering experience in diversified aspects of bridge engineering analysis, design, repair, and management as well as engineering software research and development. Select project experience includes:

- Hardy at IH45 Bridge Assessment and Repairs, Houston, Texas
- Sam Houston Tollway Bridge at Buffalo Bayou Assessment and Repairs, Houston, Texas
- Sam Houston Tollway at US290 Bridge Assessment and Repairs, Houston, Texas
- Hardy at UPPR Bridge Assessment and Repairs, Houston, Texas
- Westpark Tollway Bridge Straddle Bent Evaluation, Houston, Texas
- Westpark Tollway Sound Barrier Design, Houston, Texas
- Bridge Box Girder Corrosion Evaluation, Confidential Client

Geoffrey Hose, P.E. is a Principal in the Structural Diagnostics Services Group at Walter P Moore's Kansas City office with more than 22 years of experience in the design of maintenance facilities, offices, manufacturing and warehouse facilities, as well as a wide variety of rehabilitation and restoration projects. He will serve as the Project Manager and his primary interest is in analysis, rehabilitation and investigation of all types of structural issues.

C. Jay Wynn, PE, PTOE, is the president and owner of CJW Transportation Consultants. He has over 24 years experience in civil engineering and land transportation planning and design, including traffic impact studies, analytical studies of traffic control problems, corridor and land use origin – destination studies. Jay has experience with budget administration and is familiar with the process of procuring various forms of funding from federal state and municipal agencies. He will

Ken Messick is a Professional Land Surveyor for CJW Transportation in Springfield, MO, with 27 years of experience in land surveying and mapping. Mr. Messick has been responsible for the survey services rendered for over 100 bridge projects in southwest Missouri. The survey responsibility for these bridges was variable, but usually included initial topographic survey, existing right of way determination, setting control monuments, new right of way document preparation, and construction staking. Ken also managed the acquisition of survey information for 78 bridges in MoDot Districts 7, 8, 9, and 10 in southern Missouri for the Missouri Safe and Sound Bridge Initiative.

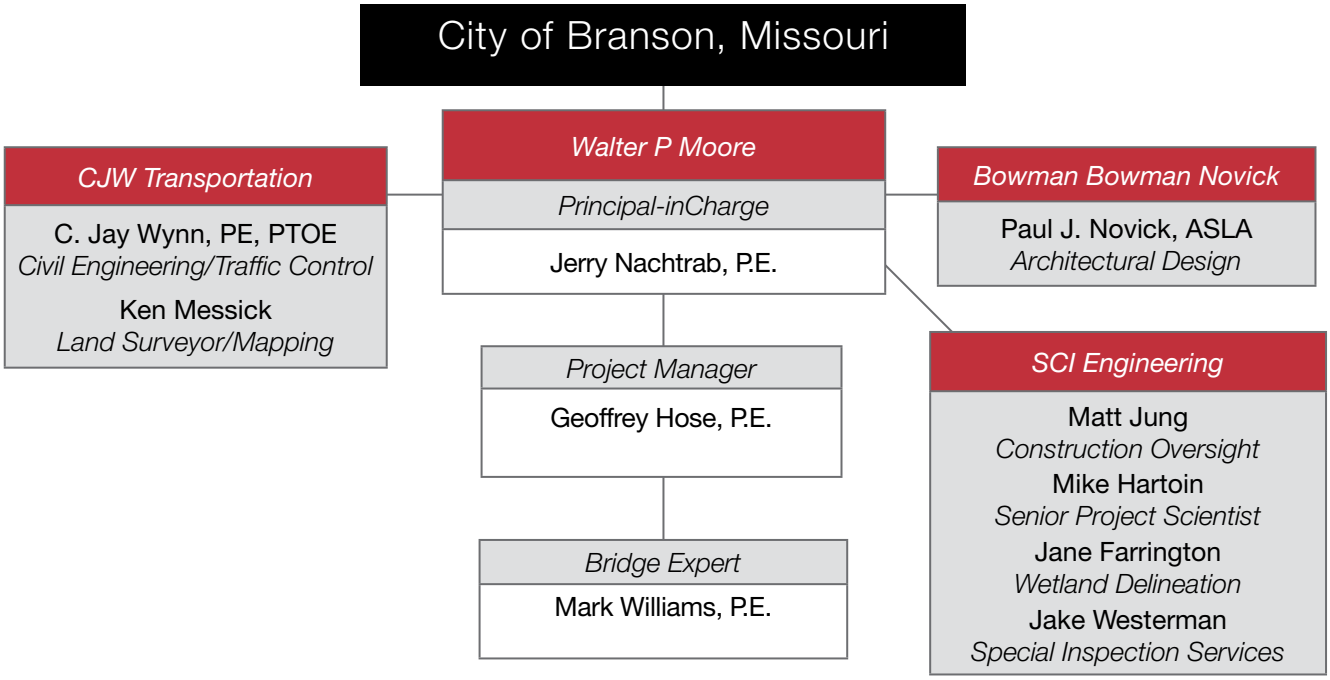
Paul J. Novick, ASLA, is a principal architect at Bowman Bowman Novick, Inc. in their Kansas City office and will serve as the architectural designer. He is responsible for overall design and coordination of the landscape architectural work of the firm from site selection and planning studies, through design and construction administration. His 20 years of professional experience has involved project management and the design of numerous park and recreation, educational, and cultural facilities.

Matt Jung, Rolla Branch Manager, Mr. Jung joined SCI in 1990 and is currently the Branch Manager for SCI's Rolla, Missouri office. He is responsible for day to day operations of the office including coordination of geotechnical, environmental, cultural resources and natural resources project management. Matt also leads the Construction Services Group and is responsible for quality control of construction materials. His certifications included ACI concrete field testing, and MoDOT aggregate, bituminous, and soils testing.

Mike Hartoin, Senior Project Scientist, Mr. Hartoin joined SCI in 1995. His experience includes environmental planning, specializing in natural resources, including wetland delineations, environmental assessments, environmental impact statements, state and federal permitting, public involvement, threatened and endangered species compliance, wetland and waterbody impact assessments and mitigation planning. He earned his Bachelor of Science degree in Biology with a specialization in Ecology, Environment and Evolution.

Jane Farrington, Project Scientist, Ms. Farrington joined SCI in 2002. Her professional experience includes more than ten years performing a wide range of environmental and National Environmental Policy Act (NEPA) services. Ms. Farrington was involved in the preparation of Environmental Impact Statements and Environmental Assessments, and her career background has trained her in a variety of areas. She earned her Master of Science degree in Environmental Studies and she is certified by the Army Corps of Engineers in Wetland Delineation and Management and is prequalified by IDOT for Ecological Studies including threatened and endangered species.

Jake Westerman, M.S.I., Manager, Special Inspection Services, Mr. Westerman joined SCI Engineering, Inc. (SCI) in 2004 to manage the firm's special inspection services. He is certified by the International Code Council (I.C.C.) as a Master of Special Inspections and has more than 14 years of experience as a Special Inspector. Mr. Westerman is certified by the American Concrete Institute (A.C.I.) in concrete testing, and is I.C.C.-certified in Reinforced Concrete, Post-Tension/Prestressed Concrete, Structural Masonry, Structural Steel Welding, Structural Steel Bolting and Spray-Applied Fireproofing. He is also experienced in Soils Inspection and Nuclear Density Testing.



A Winning Team

Our team is very interested in and excited about this opportunity to provide professional services to the City of Branson. As our response demonstrates, we have the necessary staff and the expertise needed to successfully address your bridge rehabilitation project. Our team will respond to your needs, provide personal attention, and above all else, are committed to the successful completion of your bridge repair project.

Sincerely,

WALTER P. MOORE AND ASSOCIATES, INC.

Jerry Nachtrab, P.E.
Principal / Infrastructure Division

Bridge Restoration Services

CONDITION ASSESSMENT

Walter P Moore provides in-depth bridge evaluation services and prioritizes repair requirements with recommendations for an effective course of future action.

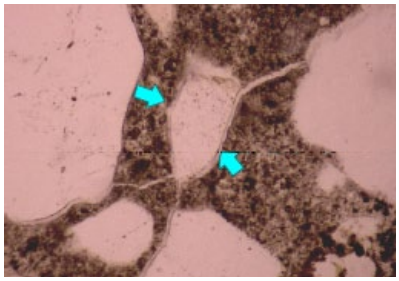
NONDESTRUCTIVE EVALUATION

Walter P Moore provides an extensive array of Nondestructive Evaluation (NDE) technologies for bridge structures that allow us to avoid making invasive exploratory openings.

AERIAL ACCESS

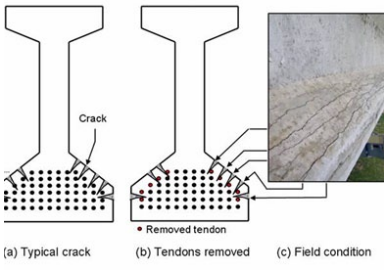
Our engineers have NBIS bridge inspection certification and are attuned to complex aerial conditions.

MATERIAL TESTING



Walter P Moore will develop a materials testing protocol to investigate and determine the root causes of distress in bridge components such as corrosion, ASR, DEF, and other deterioration mechanisms.

BRIDGE ANALYSIS



We will analytically evaluate the structural capacity of bridges with consideration for damage resulting from material deterioration and external impact.

STRENGTHENING

Walter P Moore specifies sealers, coating systems, and other protective solutions to extend the life-cycle of bridge components undergoing premature material deterioration.

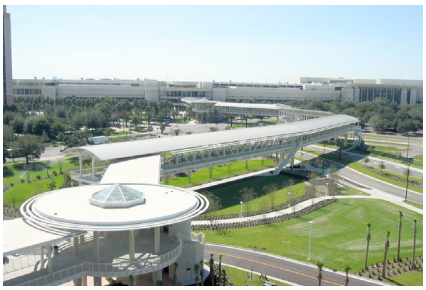
LIFE-CYCLE MANAGEMENT

When bridge components require strengthening, we design unique repair solutions with conventional materials as well as innovative composite materials such as FRP. When possible, bridges remain in service while being strengthened.

SCOUR STUDIES

When bridges are undermined by scour, we provide hydrology and hydraulics services to study tributary drainage and devise counter-measures to mitigate erosive forces at bridge supports.

DESIGN



Walter P Moore has the expertise to design long-span pedestrian and highway bridge structures.

Evaluation and Repair for Three Bridges - Harris County Toll Road Authority, Houston, Texas

The Walter P Moore Structural Diagnostics Services Group conducted a Phase I and Phase II forensic evaluation and repair of three highway bridges with deterioration issues for the Harris County Toll Road Authority (HCTRA) in Houston, Texas.

The 9-span and 14-span bridges were experiencing concrete deterioration. The site evaluation and laboratory testing revealed that the premature concrete deterioration (PCD) of two of the bridges was being caused by Alkali Silica Reaction (ASR) issues. The 15-span bridge was being undermined by scour. The review of this bridge was a multi-disciplinary project utilizing the hydraulics and hydrology expertise of the Walter P Moore Infrastructure Division.

Hotel/Pier Structural Condition Assessment, Galveston, Texas

This concrete pier structure supports the concrete parking deck located around the base of the six-story hotel building over the waters of the Gulf of Mexico. The overall dimensions of the hotel pier are approximately 1,000 feet long by 120 feet wide. A separate small fishing pier built low near the water is located at the south end of the hotel pier.

Walter P Moore Structural Diagnostics Services Group conducted an overall visual assessment of the severe structural damage that occurred on the underside of the concrete pier structure attributable to corrosion and long-term exposure to salt water. Following the initial visual evaluation, repair cost estimates were prepared for the owner.

Additional Walter P Moore Bridge Restoration and Reconstruction Design:

MetroLink Cross County Extension – Union Pacific & Manchester Bridges, St. Louis, Missouri

US-60 at Arkansas River, Poad Creek, Oklahoma

Arrington Road Bridge, College Station, Texas

IH-35E at Brookside, FM 1446 and FM 66, Waxahachie, Texas

Hardy Toll Road at IH45 & UPRR Bridges, Houston, Texas

Sam Houston Tollway at Buffalo Bayou Bridge Assessment and Repairs, Houston, Texas

Sam Houston Tollway at US290 Bridge Assessment and Repairs, Houston, Texas

Westpark Toll Road at US59 and at Alief Clodine Road, Houston, Texas

Oyster Creek Bridge, Houston, Texas

Pinellas County Courthouse Site Bridge, Clearwater, Florida

With an office in Rolla, Missouri, SCI is very familiar with Taney County, and Branson, Missouri. One of SCI's most prominent projects in the area included providing construction testing services during the construction of the Convention Center and Parking Garage located in the Branson Landing Development in Branson, Missouri. SCI's services included providing quality assurance to document construction procedures for compliance with plans, specifications, and good construction practice.

Springfield/Branson National Airport Mitigation Project
Rutledge – Wilson Farm Community Park

SCI provided professional services for the Springfield Branson National Airport stream and wetland mitigation project. Services included coordination with the U.S. Army Corps of Engineers in order to modify the existing mitigation plan, in turn reducing construction costs for the Airport. Additionally, contractor coordination and construction observation services were provided during construction of the recently completed 0.14 acre wetland, the enhancement of the Wilson Creek riparian corridor, and the planting of over 778 trees at Rutledge Wilson Farm Park. A construction completion report of the mitigation project was prepared and submitted to both the Airport and the U.S. Army Corps of Engineers. The report will include written text summarizing the mitigation activities, as well as representative photographs, field measurements, and locations as recorded using a handheld global positioning system (GPS) as required by the Section 404 Permit.

Dorsett Road and Highway 270 Reconstruction, St. Louis County, Missouri

SCI prepared a categorical exclusion determination, Form CE-2, in accordance with 23CFR771-117(d) for proposed interchange improvements and associated entrance/exit ramps and an outer road relocation. The project consisted of a determination of farmland, wetland, noise, water quality, air quality, and floodplain impacts. Likewise, an evaluation of potential impacts to cultural resources, Section 4(f) properties, and threatened and endangered species was made. Via consultation with federal and state regulatory databases, a determination was made whether the project would be expected to encounter hazardous waste materials.

Joachim Avenue – New South Alignment, Herculaneum, Missouri

SCI prepared a Categorical Exclusion-2 report for the preliminary design of a new bridge and associated roadway over Joachim Creek. Environmental services included air quality impacts, noise impacts, cultural resources, Section 4(f) resources, wetland mitigation, threatened and endangered species surveys, and special/hazardous waste and geologic resources. A Phase One Environmental Site Assessment (ESA) and a limited Phase Two ESA were conducted in order to evaluate the presence of large scale impact to soil from the identified RECs. The area was surveyed to identify if sensitive receptors, such as churches, schools, hospitals, nature areas, or residences were present and could be impacted by the proposed project. A wetland and waterbody delineation was conducted and results were coordinated with the U.S. Army Corps of Engineers and the Missouri Department of Natural Resources. Off-site and on-site mitigation plans were prepared for impacts to Joachim Creek and surrounding wetlands.

Rail Bridge Replacement Bridge No. AB 14.7, Ft. Leonard Wood, Missouri

This ARRA project included disassembly, selective demolition, and new construction of a bridge to be located near Fort Leonard Wood, Missouri. The railroad and track are owned by the U.S. Army Corps of Engineers. SCI provided compaction testing on soil fill, drilled shaft/pile inspections, cross-hole sonic log inspections, reinforcing steel inspections, fresh Portland cement concrete observation/testing, and structural steel inspections.

Missouri Department of Transportation, Southwest Missouri Region

SCI has provided geotechnical and construction testing services for numerous MoDOT projects in the Southwest Missouri area. Projects have included Route 86 bridges, Highways 65 & 60 Interchange, District 8 Bride Epoxy Overlays, Route 97/ Dade County Bridge Replacements, and the Highway 65/Springfield Underground project. In addition, SCI currently holds a MoDOT Master Services Agreement to provide on-call construction material inspection and testing services under a 3-year Master Agreement for four MoDOT Districts, which includes District 8 - Springfield.

Project Experience

CJW - DESIGN OVERVIEW

Emergency Department For Cox Health Systems, Springfield, Missouri

CJW Transportation Consultants has been retained by Cox Health Systems to provide professional services for the Emergency Department building. CJW's work includes developing a site design for the construction of the ED. Construction plans will include grading and staking layouts with finish floor elevations, parking lot and entrance design, storm water detention pond design and conveyance, utility extension design (gas, water, sewer), erosion control plans (SWPPP), completion of MoDNR land disturbance permit application, planting design, irrigation plan, and a landscape lighting plan. The construction plans and City Utilities for approval prior to issuance of a building permit. Surveying Services include topographic survey for site development and preparation of easements for storm water and sewer.

Fort & Sunshine, City of Springfield, Missouri

CJW Transportation Consultants has been retained by the City of Springfield to provide professional services for intersection improvements at Fort Avenue and Sunshine Street in Springfield. CJW's work includes developing construction plans and specifications for reconstructing the intersection to add separate right turn lanes for the northbound and eastbound right turn movements. Surveying services include topographic survey, establishment of right-of-way, and preparation of easements.

Commercial Street Streetscape, City of Springfield, Missouri

CJW Transportation Consultants has been retained by the City of Springfield to provide professional and surveying services for the redesign of historic Commercial Street. CJW performed a topographic survey of the corridor and located right-of-way, property lines, and utilities.

Project Experience

BOWMAN BOWMAN NOVICK - DESIGN OVERVIEW

Prairie Star Parkway, Lenexa, Kansas

Bowman Bowman Novick provided full landscape architectural services for Prairie Star Parkway located in Lenexa, Kansas. A monumental stone entry feature, extensive parkway landscaping, and a hiking/biking trail are some of the feature elements of this award winning project. Early in the planning process, BBN developed the alternative of shifting the proposed roadway alignment to the south, allowing a 12' wide pedestrian and bicycle trail to be located along an established hedgerow. This alignment offers the trail user the opportunity to walk or cycle along mature stands of oak and hackberry trees, enjoying the shade aff orded by the large canopies. As the trail moves to the west, a connection to the Johnson County Streamway Trail System is provided at Mill Creek, completing a critical link in the countywide system. BBN was also responsible for the design of the aesthetic enhancement of the dual bridge structure which includes native Kansas limestone detailing, ornamental railings and dramatic lighting. The project was awarded the Metro Area - APWA Project of the Year.

US Highway 169 Bridges, Kansas City, Missouri

Bowman Bowman Novick, Inc. developed the architectural detailing required for two bridges along the Highway 169 corridor in North Kansas City, Missouri. With each structure being located on Parkways within the Kansas City Missouri Parks and Boulevards System, special attention was given to the view of the bridges for both the vehicular driver and pedestrian alike. Working with materials common to the boulevard system, BBN developed a concept based on monumental sized columns with inset panels and large finials spanning across the bridge structure. Ornamental fencing spans between the columns providing visual interest and pedestrian safety.

Project Approach

GENERAL DESCRIPTION

Our team understands that a good survey is at the root of every development, engineering design, or construction project. For this reason, our team includes a Licensed Professional Land Surveyor with over 30 years of experience, including the right of way deed and exhibit preparation for various civil engineer projects with over 60 miles of natural gas pipeline.

Given the bridge's condition, it is best that the bridge is closed while work on the deck is done. Therefore, we will prepare a comprehensive traffic control plan for the project. The closure of the bridge, which serves as a primary thoroughfare through historic downtown Branson will need to be carefully considered in order to address all of the motoring publics concerns. The most likely alternative to crossing Roark Creek would be the Branson Landing Boulevard Bridge which is directly east of the Veterans Boulevard Bridge. This crossing will provide the most direct and logical route around the closure. Utilizing the Branson Landing Boulevard Bridge as the alternate would also require the need for modified signal timing along Branson Landing Boulevard. Our team is capable of performing signal timing and optimization for the temporary rerouting of the traffic.

Furthermore, the potential for impact to any adjacent wetlands must be determined early in the planning phase. Our team will review National Wetland Inventory and Soil Survey Maps for potential impacts. A wetland delineation will be conducted, and information will be coordinated with the U.S. Army Corps of Engineers (CE) and the Missouri Department of Natural Resources (MDNR). If preliminary investigations indicate the likelihood of wetlands, a formal wetland delineation and calculation of impacts will be required. It is likely that a Section 10 and/or 404 permit from the CE will be necessary. This proposal includes a wetland delineation, preparation of a formal report, the assessment of impacts, the review of development plans, and applying for the Section 404 Permit from the CE and Section 401 Water Quality Certification from MDNR.

We will also coordinate with the Missouri Department of Conservation (MDC) to determine whether any threatened or endangered species will potentially be affected by the proposed project. If MDC responds that the state's rare species are known to exist within the project area, further coordination with MDC will be required. If federally-listed species are known to occur within the project area, coordination with the U.S. Fish and Wildlife Service will then be necessary.

We will determine necessary right-of-way and easements required to accomplish the bridge repair. Our team can prepare drawings and can be available to meet with affected property owners and help the City educate them about this process and the impacts to them.

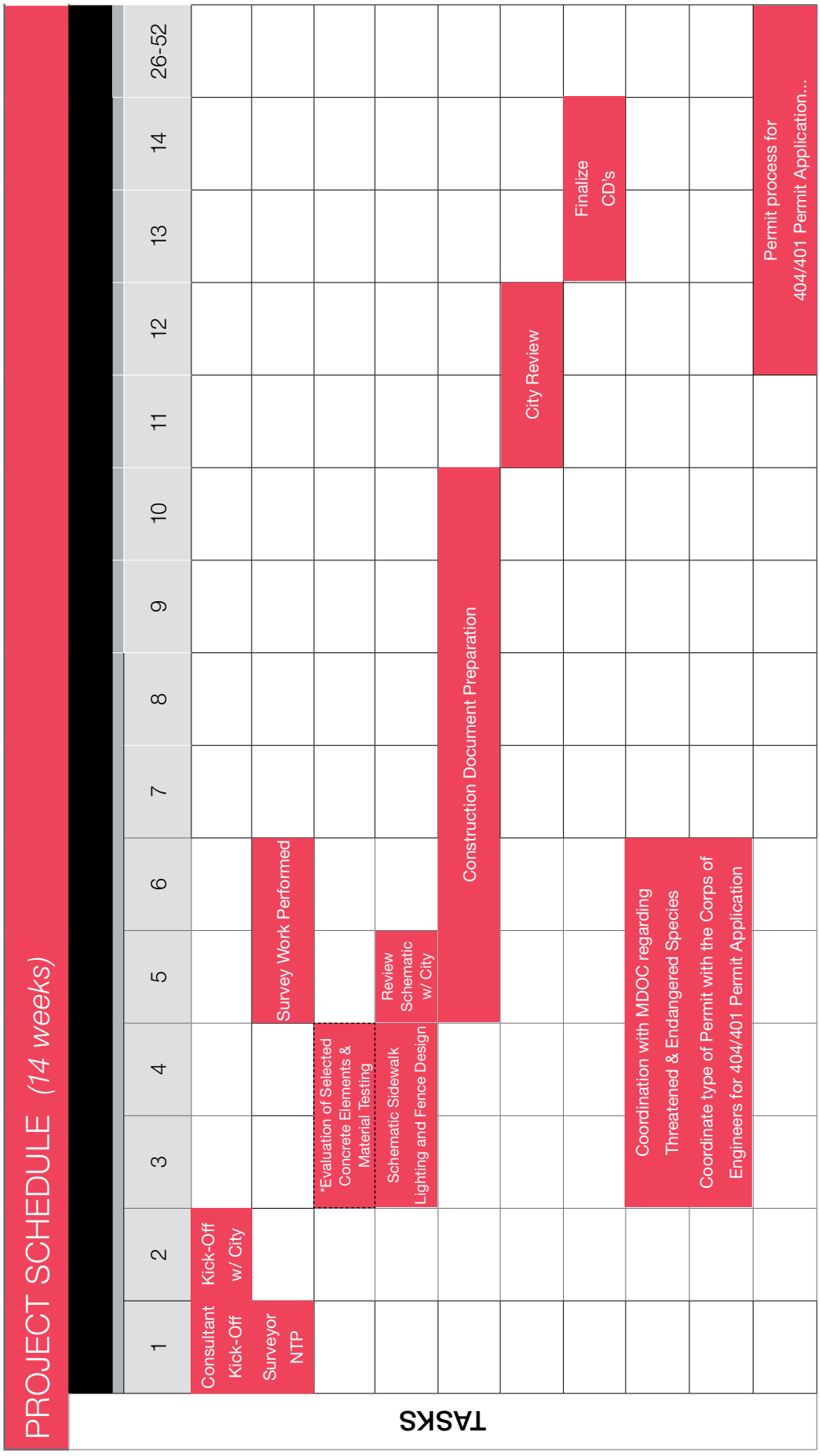
In order to perform repairs to the underside of the bridge deck and columns, a causeway needs to be built into/across Roark Creek. The construction method and means will be the responsibility of the contractor, but the design of the causeway and coordination with the U.S. Army Corps of Engineers (CE) is included in this scope. Impacts to Roark Creek will require a permit from the CE. The scope of services outlined in this proposal includes actions necessary to complete the Categorical Exclusion Determination Form (CE-2), as required by the Missouri Department of Transportation (MODOT). Access to the underside of the bridge structure will also require early planning and coordination with the MNA Railroad. Team member SCI Engineering holds a Master Services Agreement with Norfolk Southern Railroad and has

personnel who have had training in basic railroad operational requirements and railroad safety. SCI has performed more than 100 projects on railroad property and most of these projects involve coordination of our activities with railroad operations including scheduling track time, engaging a flagman, and using appropriate lockout procedures, etc.

Extreme environmental conditions and repetitive vehicular loading can have adverse effects on highway bridges and decrease a bridge's life expectancy. Our team provides evaluation, testing and repair services for highway bridges to increase their life span and restore their structural integrity with emphasis on public safety, longevity, and economy of our repair solutions. At the Veterans Memorial Bridge, the majority of the concrete distress occurs at the bridge bents, probably due to water and deicing salts being carried through the expansion joints. The most extensive distress is adjacent to the railroad which may be due to increased carbonation of the concrete from train engine exhaust. We recommend that testing be performed at selected locations to determine corrosion potential and chloride ion content. This information will help determine if more extensive issues exists and if additional protection from corrosion is warranted to maximize the life of the repairs.

Concurrent with the field investigation of the concrete structure, schematic architectural design of the side walk and bridge improvements will begin as well as structural evaluation of the existing bridge structure to determine the capacity to support the proposed wider sidewalk structure and the impacts to the existing framing. In cooperation with the City of Branson, we will develop aesthetic enhancements for the Veterans Boulevard Bridge that respect the original 1931 structure's details, while taking design cues from the Branson Landing Boulevard Bridge. Careful and thoughtful architectural design will result in a solution that harmonizes the historical details of the original bridge with new pedestrian walkways, decorative light standards and bridge façade and fencing, while meeting ADA requirements.

Together, we will work diligently with the City of Branson Utilities Department to establish an acceptable means of removing the defunct waterline and capping the ends as necessary to prevent any infiltration to the water system.


PROJECT SCHEDULE (14 weeks)
TASKS
1
2
3
4
5
6
7
8
9
10
11
12
13
14
26-52
Consultant Kick-Off
Kick-Off w/ City
Surveyor NTP
Survey Work Performed
*Evaluation of Selected Concrete Elements & Material Testing
Review Schematic w/ City
Schematic Sidewalk Lighting and Fence Design
Construction Document Preparation
City Review
Finalize CD's
Coordination with MDOC regarding Threatened & Endangered Species
Coordinate type of Permit with the Corps of Engineers for 404/401 Permit Application
Permit process for 404/401 Permit Application...

Project Background

The existing Veteran's Boulevard Bridge was originally constructed in 1931 and underwent rehabilitation in both 1959 and 1989. In 1959, bridge rail modifications were made to accommodate the addition of a 3'-10" wide pedestrian sidewalk along the west side of the bridge. In 1989, the bridge deck was repaired, including a new wearing surface and seal coat, and the bridge rail along the east side of the bridge was upgraded. The existing 462'-6" long bridge is a concrete deck girder design. The bridge includes nine simple spans (8-52'-6" & 1-42'-6") that carry Veteran's Boulevard over Roark Creek and Missouri Pacific Railroad.

Veteran's Boulevard Bridge
Over Roark Creek & MO. Pacific Railroad

The Veteran's Boulevard Bridge is situated in Branson along a prominent corridor providing access to and from downtown. The average annual daily traffic volume across the bridge is 12,000 vehicles. Years of use and exposure to the elements have begun to take their toll on the bridge. The objective of the City of Branson is to ensure the continued serviceability of the bridge. Bridge maintenance and inspection reports indicated that much of the bridge is still holding-up quite well, and targeted structural repairs can considerably extend the functional life of the bridge. In addition, City financial constraints rule out a complete bridge replacement. Thus, the City has requested engineering proposals to provide needed repairs, along with the replacement of the pedestrian sidewalk along the west side of the bridge.

Existing Bridge Condition & Project Objectives

This project is divided into two distinct phases; providing structural repairs to the bridge, and replacement of the pedestrian sidewalk. The sidewalk replacement is in response to both the existing sidewalk condition and its restricted functionality. The current sidewalk soffit exhibits widespread concrete deterioration and delamination. Combine that with the fact that the sidewalk is only 3'-10" wide, and one understands the City's desire to replace it with a wider walkway.

Looking South Along Sidewalk
on West Side of Bridge

The extent of necessary structural bridge repairs will determine the final scope of this project. If structural repairs and the sidewalk replacement can be efficiently constructed, the City desires to incorporate additional aesthetic elements into the project. With this in mind, DRG has suggested alternatives to accomplish the primary objectives, along with cost saving measures that would allow further improvements to be considered. Yet, before potential solutions can be discussed, the existing bridge condition must be summarized.

The bridge deck is in adequate condition, considering it has been 23 years since it was rehabilitated, and is not a primary concern. Isolated partial depth repairs will be addressed through a standardized repair detail. If money becomes available, a complete deck overlay could be considered, yet it does not appear necessary at this juncture. The concrete deck girders and pier columns also exhibit isolated spalls, delamination areas, and minor cracking. Repair details for these areas will be developed.

Concrete Deterioration
Along East Cantilever Soffit

Moderate concrete deterioration is typical across pier tie-beams and along the bottom of pier beams. The cantilevered sections of the pier beams also display delamination and minor spalling. In addition, the cantilever section along the east side of the bridge (not sidewalk side) requires concrete patching along the soffit. Each of these deficiencies will be address with standardized detail repairs

As previously mentioned, the Veteran's Boulevard Bridge includes nine simple-spans. Since the individual bridge spans are not continuous, they are free to move independent of each other. From our site visit it appears that a relative transverse (lateral) shift between adjoining spans has occurred. The resulting offset alignment needs to being evaluated to ensure the spans remain securely on their bearings. The offset alignment will also affect the replacement of the pedestrian sidewalk and accompanying bridge barrier. Clearly any lateral shift between spans will result in barriers, sidewalks and pedestrian fences not lining up properly.

Typical Lateral Shift
Between Bridge Spans

Regarding Utilities

Any repair and rehabilitation of the bridge needs to account for the utilities that are attached, or in close proximity, to the structure. An abandoned water line is attached to the west side of the bridge and will be removed in conjunction with this project. Power lines run along the west approach roadway and complicate construction access from the northwest corner of the site. Multiple PVC conduits are situated along the north bridge abutment and will need to be avoided throughout construction.

Abandoned Water Line & Active
Power Conduits

Currently overhead power lines span across the bridge supplying electricity to the light poles. These power lines are situated along the west side of the bridge above the existing sidewalk, and are attached to the existing bridge light poles. Considering the existing light poles will be removed and replaced with new ornamental devices the power lines will be deenergized, which will also facilitate a safe and efficient construction process. These overhead lines will be replaced with conduit placed inside the bridge barrier or slab. Removing the overhead power lines will compliment the City's goal to improve the aesthetic appearance of the bridge. To facilitate these improvements, expansion joints allowing both longitudinal and transverse movement will be utilized at the end of bridge spans.

Project Funding

As a result of the transfer of responsibility for bridge maintenance from MoDOT to the City of Branson in 2004, this project is being funding entirely by the City. We are well aware of the operating budget for the City of Branson. From our conversation with the City, we understand that additional funding could be approved by the City Council if found to be necessary or justified. The hard truth is that budgets rarely meet infrastructure needs. Thus, experience in similar projects becomes invaluable as a means of getting the biggest bang for your buck. Our team has already identified several design approaches that should reduce construction costs for the City and allow secondary goals to be addressed. With funding in mind, DRG has provided a summary of our approach to this project.

Funding? What Funding?
Helping You Do More With Less

Project Design Approach

The approach to this design project must begin by establishing the extent of deterioration to the bridge, and the structural capacity of the existing deck girders. A structural model will be developed to load rate the existing concrete deck girders. The model will be constructed from the existing plans, as well as field verified deterioration. Once the capacity of the existing elements is established, a new wider sidewalk can be designed.

From our discussion with the City, the project objectives include addressing the previously described deterioration, replacing the existing sidewalk with a new 6'-0" wide sidewalk, and installing new bridge corral rail between the sidewalk and vehicular lane. Aesthetic elements include utilizing form liner in the bridge barrier, installing ornamental pedestrian fencing along the outside edge of the new sidewalk, and replacing the existing bridge lighting with new lights matching the motif of the fence. The overall visual goal is to mimic the appearance of the nearby Branson Landing Bridge.

REPLACING THE SIDEWALK

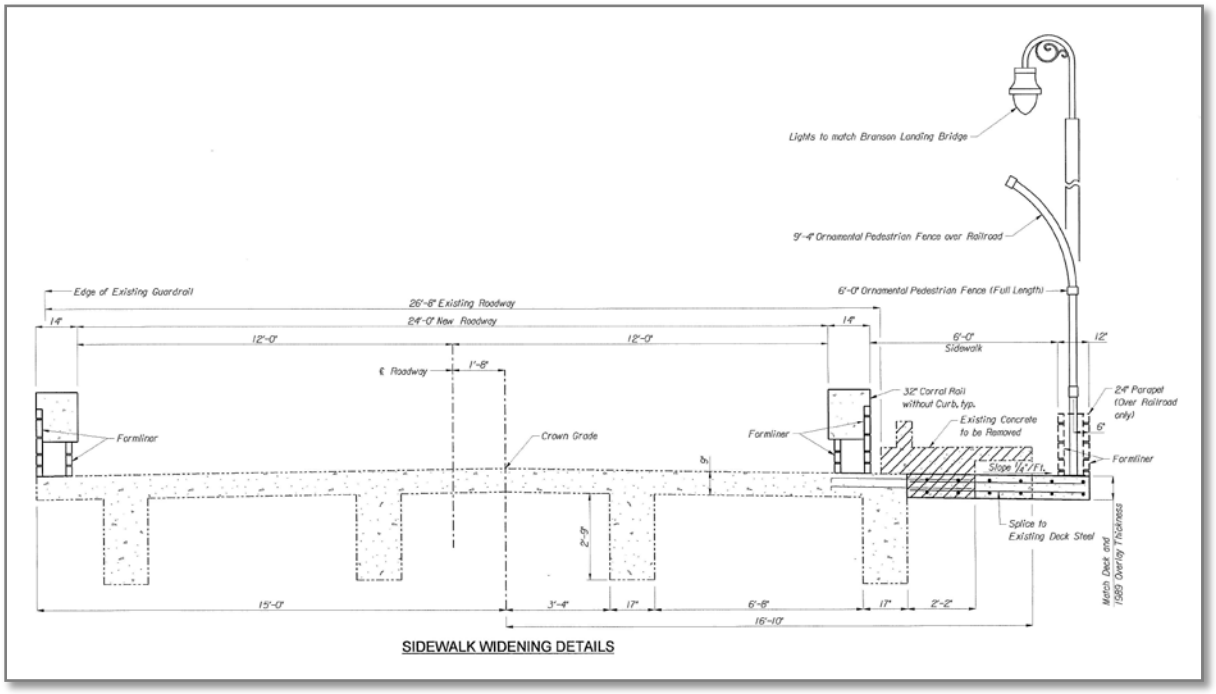
The existing sidewalk was installed as a cantilever section attached to the top of the original deck. The cantilever is supported by a single series of rebar that were doweled into the deck. It is unlikely that the existing steel in the cantilever would be sufficient to support widening the cantilever itself an additional two feet, to accommodate the proposed sidewalk. It would also be difficult to strengthen the cantilever by adding depth, because the cantilever is not in contact with the deck for the full length. To save weight, the designers placed the supports for the sidewalk at six-foot intervals. Thus, it would not be possible to strengthen the full cantilever length, due to the gaps between the cantilever and deck.

Existing Cantilever Sidewalk

In addition, the cantilever support spacing indicates that the sidewalk designers were concerned with additional loading being placed on the superstructure. Therefore, particular attention should be placed on potential

loading scenarios induced by a new, wider sidewalk. Widening of the cantilevered sidewalk would not only add dead load weight to the structure, it would also add two feet of potential pedestrian live load. This new loading would be magnified because it is further outside the structure, causing torque in the outer deck girder.

For these reasons, DRG proposes to remove the entire existing cantilevered sidewalk down to the original deck surface. The proposed sidewalk would be installed with methods similar to a deck widening. The overhang portion would be removed to near the exterior deck girder, leaving the existing deck rebar intact. New rebar would then be spliced to the existing rebar, using either a lap splice or a mechanical splice. Concrete would then be placed for the necessary sidewalk width, incorporating a thickness equivalent to the original deck plus the 1989 overlay. The intention of this approach would be the integration of the new sidewalk and existing deck, resulting in one composite structure spanning the deck girders.



Proposed Sidewalk Extension

Currently, the roadway width is approximately 26'-8" for the two traffic lanes. If the roadway is left at the same width, the deck would need to be widened slightly over five feet to accommodate the six foot sidewalk. This would likely require some type of bracing from below, such as a concrete strut between the deck girder and the overhang. It may even be necessary to brace the exterior deck girder with a W-beam between it and the next deck girder. However, because the deck and sidewalk are now at a uniform height, it could be possible to reduce the lane widths, and use more of the original deck as part of the sidewalk. **DRG proposes the roadway be reduced to 24'-0". If the east side of the bridge remains as is, this would require the deck to be widened only 2'-6", since the remaining width is provided by the reduced lane widths. This approach would significantly reduce construction cost, minimize additional loading placed on the superstructure, and diminish the likelihood of needing additional support systems, such as the concrete strut or deck girder bracing.** Adding corral rail to the west side of the bridge, as explained shortly, would still require only 3'-4" of widening.

AESTHETIC ENHANCEMENT

The Veteran's Boulevard Bridge acts as a main entrance to downtown Branson and, as such, symbolizes the City. For that reason, just fixing the bridge to extend its life is not enough; we also need to enhance the appearance of the structure. Currently, the sidewalk is separated by a short curb, and the pedestrian fence is a simple chain link fence like that found in someone's back yard. Also, the east traffic barrier is currently a thrie beam guardrail that will definitely not win any awards for appearance.

Further adding to the importance of aesthetics is the newly constructed Branson Landing Boulevard Bridge, only a few hundred feet downstream from the Veteran's Bridge. A person can see the aesthetic enhancements of form liner, ornamental fencing, and decorative street lighting on the Branson Landing Bridge from the Veteran's Bridge. Unfortunately, that means one can also see the dilapidated Veteran's Bridge from the Landing Bridge. These two structures, while not built at the same time or servicing the same highway, are sister bridges, providing tourists two links to downtown Branson from the North. Thus, in addition to repairing the Veteran's Bridge, this project will also aim to improve the appearance of the Veteran's Bridge in order to maintain the standard established by its sister structure.

Looking Downstream at the
Branson Landing Boulevard Bridge

DRG proposes that the rehabilitation and widening of the sidewalk on the Veteran's Bridge include aesthetic enhancements similar to the Branson Landing Bridge wherever possible. This would include a corral rail barrier, with incorporated stone form liner, between the widened sidewalk and the travelway. An ornamental black steel fence similar to the Landing Bridge would also be installed as the pedestrian fence, with a raised section as required above the railroad tracks. Decorative lighting similar to the Landing Bridge would also be installed as requested in the solicitation. These would be the minimum aesthetic enhancements, considering both the barrier and fence require replacing anyway.

However, DRG also suggests a few more enhancements that are not mentioned in the solicitation, which would greatly enhance the appearance of the bridge. First, DRG suggests that the thrie beam barrier along the east side of the bridge be replaced with corral curb and form liner. As this side faces the Landing Bridge, this improvement would be the single most effective improvement for viewing the bridge from afar. Not to mention the improved symmetry of having the same barrier on both sides of the roadway. Also, DRG suggests using tapered barrier curbs that transition from the roadway curb, instead of having guardrail and terminal sections.

Typical Branson Landing
Bridge Aesthetics

Finally, instead of simply blocking drainage above the railroad with a steel plate, we would suggest a rectangular parapet for the fencing to be placed on, again with stone form liner on both sides. The cost associated with these additional enhancements will likely be offset by the savings realized from DRG's suggested sidewalk approach. Regardless, DRG will work with the City to determine the most effective use of its resources. A recent DRG project that incorporated nearly all of the suggested enhancements is the George Brett Bridge in Kansas City, Missouri, near the Truman Sports Complex.

George Brett Bridge
(Blue Ridge Cutoff Over I-70)

POTENTIAL DESIGN CHALLENGES

All construction projects, particularly rehabilitation projects, are not without potential challenges, some large and some small. This sidewalk enhancement presents the challenge of adding load to an already antiquated design. However, the challenge of loading can be minimized by removing the existing structure and adding to the deck as previously described. The Veteran's Bridge has the complication of being made of nine simple spans, not one continuous structure, which means that the corral curb will need modifications to have joints that match the skew of the bridge. Yet, any other type of curb would have the same requirement.

Looking Under Veteran's Bridge
Use Construction Methods to
Avoid Need for Causeway

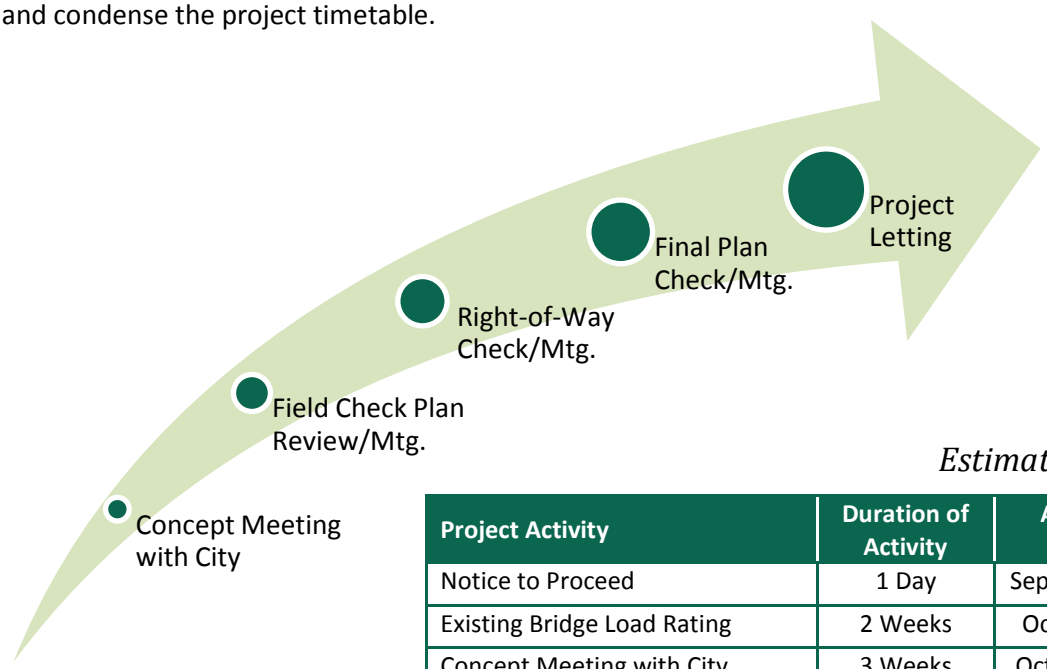
The largest potential challenge for this project lies in what is below the structure – a relatively large creek and a railroad. Construction encroachment on either requires permitting and other additional expenses, such as a causeway or flagman. DRG suggests that this potential construction risk be minimized by utilizing the deck surface to reach as much repair area as possible. DRG has contacted a bridge contractor familiar with the Veteran's Bridge who has confirmed that all repairs are within reach of a snooper truck. There may still be a need for permits, but DRG will work with the City to obtain any required permitting, meet any environmental requirements, and maintain communication with the railroad.

Utilizing the deck surface as a construction area will mean that the structure will need to be closed to traffic during construction. Although the structure is highly traveled, the nearby Branson Landing Bridge would provide an adequate detour route. Access to the hotel north of the structure would be maintained during construction. DRG will be responsible for designing detour signage for the Skaggs roundabout and other locations as required.

Railroad Track Underneath
Veteran's Bridge

Preliminary Project Schedule

According to our conversation with the City, construction funding for this project will be accessible on January 1, 2012. Thus, the City desires to begin design as soon as possible to ensure the project can be let prior to the 2012 summer construction season. DRG is capable of meeting the City's timetable and has established a preliminary project schedule. As shown below, a notice-to-proceed date of Friday, September 30th was assumed. The key milestone dates are shown in the table below, and result in a project letting date of May 1, 2012. If this schedule does not meet the City's goals, DRG will make every effort to accommodate your needs and condense the project timetable.



Estimated Project Schedule

Project Activity	Duration of Activity	Activity Begins	Activity Completed
Notice to Proceed	1 Day	Sept-30-2011	Sept-30-2011
Existing Bridge Load Rating	2 Weeks	Oct-3-2011	Oct-14-2011
Concept Meeting with City	3 Weeks	Oct-17-2011	Nov-4-2011
Bridge Field Surveying	4 Weeks	Nov-7-2011	Dec-2-2011
Field Check Review/Meeting	6 Weeks	Dec-5-2011	Jan-20-2012
Contact/Coordinate with Utilities	2 Weeks	Jan-23-2012	Feb-3-2012
Right-of-Way Check/Meeting	4 Weeks	Feb-6-2012	Mar-2-2012
Final Plan Check/Meeting	4 Weeks	Mar-5-2012	Mar-30-2012
Sealed/Stamped Plans Delivered	2 Weeks	Apr-2-2012	Apr-16-2012
Project Letting	1 Day	May-1-2012	May-1-2012

Project Team

Our project team will be led by Angelo Mannino, who will be the principal-in-charge. Joe Rishmany will function as the project manager, with Justin Davis acting as his lead bridge designer and Michele Keal overseeing all applicable roadway design. Filling out the design team will be Chris Harker, Terry Kaiser, Darren Rice, Eric Reinkemeyer, Brain Wrisinger, and Craig Mitchell. As discussed with the City, team resumes and office locations are included with the Statement of Qualifications (SOQ) previously provided and on file with the City.

Similar Project Experience

Riverview & 65th Street Bridges Over Turner Diagonal

The Unified Government of Wyandotte County/Kansas City, KS (UG) had been tracking the progression of concrete deterioration along the cantilevered deck soffit of two of their structures for several years. In 2011, following routine inspections, it was decided the extent of damage warranted action. DRG was directed to evaluate the damage and provide short- and long-term potential solutions. Research showed similar situations had resulted in failures, sometimes as dramatic as complete collaspe of the cantilevers. Due to extenuating circumstances, including funding and bridge design, the cantilevered sections were removed entirely.

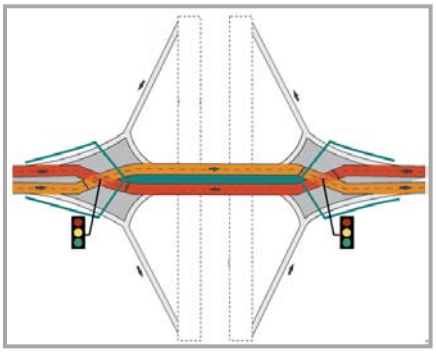
The immediate concern was addressed by saw cutting the existing cantilevered deck and removing it from the bridge. Temporary bridge barriers were installed and doweled into the bridge deck to provide a safe travelway. The second phase involves the construction of new cantilevered sections that will reestablish the preexisting lane and shoulder widths. Additional repairs are necessary along the bridge superstructure in order to provide sound concrete for doweling in/connecting the new cantilvered sections. Design is currently underway.

James Street Viaduct Emergency Pier Repairs

Following a routine inspection of the James Street Bridge, the UG determined that the condition of some substructure elements had deteriorated. Severe concrete deterioration on the west column of Pier No. 12 prompted the UG to call on DRG to design an emergency repair for the pier. In addition to the exterior column's condition, the UG and DRG also concluded that the remaining two columns of Pier No. 12, along with isolated areas of the exterior bridge girder, required attention. The cause of the advanced levels of concrete deterioration and steel corrosion was a damaged expansion joint, situated directly above this pier, allowing water and surface treatments to drain onto the substructure elements.

Due to many breaks in the spiral column steel confinement bars, the existing 3'-0" diameter column was expanded to 3'-6" with additional hoop bars and verticals. Enlarging the diameter of the column allowed for the placement of new concrete. This new surface provided the proper rebar cover and also allowed for the installation of a Fiber Reinforced Polymer (FRP). Do to the extent of corrosion, DRG concluded that the rebar was no longer providing the intended tensile strength. Thus, the application of an FRP wrap provided further confinement for the concrete, while also supplying the tensile strength required. A seal coat was also applied to the pier beam to protect it from further water damage. This relatively quick repair was conducted with no interruption to traffic.

Route 248 over Route 65 Interchange



With significant tourism growth in the Branson Landing, the need arose for expansion of highways in the area. Route 248, providing access to the Landing from the North, was one interchange designated by the City of Branson for improvement. The overpass experienced significant delays for eastbound traffic. The initial interchange design consisted of two roundabouts off each end of the bridge to replace the typical stoplight intersection. The bridge was to be widened by 8 ft to provide two through lanes in each direction (four total), with the roundabouts eliminating the need for left turn lanes. The widened bridge would use the existing plate girder superstructure, and only require replacement of 3 feet of concrete deck. The rest of the deck would be hydro-blasted, repaired where necessary, and overlaid with latex concrete. A new plate girder was designed to support the widened portion.

Due to funding problems, the interchange project was delayed for a few years, and then DRG was directed to re-examine the design to find cost savings. The innovative solution was a diverging diamond, which will be only the 2nd design of this type in the state, and for that matter, the country. This type of intersection is unique in that the traffic weaves on either side of the interchange so that all turning movements are simply yields, and only through traffic must go through a stoplight. The design now supplies two eastbound and one westbound through lanes. Instead of the fourth lane, the center of the bridge between traffic barriers was used as a pedestrian walkway.

Noland Road Over I-70 Interchange

Originally, the conceptual design of the interchange called for a Single Point Urban Interchange, with a bridge approximately 200' wide. The total estimate for the project budget was originally over $33 million. By applying innovative design techniques such as the tight urban diamond (TUD) with MSE walls, prestressed concrete box girders, and eliminating staged construction, the cost of the project was reduced to a final estimate of about $7.5 million. Several major factors played a role in the design of the interchange. The largest factor was ROW constraints since the interchange was surrounded by businesses that would be expensive to purchase. Also, the bridge was required to span additional planned future lanes of I-70. By using a TUD interchange utilizing MSE walls to support the ramps and abutments, the bridge span length and the ROW conflicts were minimized.

Time was also a major factor, as the business community in the area considers the interchange vital. It was decided that although staged construction would leave the bridge open for traffic, the prolonged construction would ultimately hurt business more than closing the bridge. To expedite construction, an alternate design utilizing a 6' wide prestressed box girder, which had never been used before, was employed.

George Brett Bridge (Blue Ridge Cut-Off Over I-70)

With its proximity to the Truman Sports Complex, the Blue Ridge Cut-Off (BRC) Bridge over I-70 serves as a major transportation hub, carrying 25,000 vehicles daily, as well as several thousand pedestrians on event days. Therefore, the aesthetic appearance of the bridge was an important factor in its design. The three span, 225' long bridge utilizes corral curb instead of the standard barrier curb in order to have form liner on both the outside and the lower portion of the inside of the curb. In addition, an ornamental 64" fence outside the 10' wide sidewalk is installed on top of a 2'-8" parapet wall that also utilizes form liner on both sides. The result is a structure that is open and appealing to pedestrians visiting the sports complex.

Speed and ease of construction were paramount to the success of the BRC Bridge Project. The existing bridge had to be torn out and completely replaced while no events were occurring at the Truman Sports Complex. This available window ran from the end of the football and beginning of the baseball season (January to early April). This provided the contractor only 3 months to completely demolish and rebuild a bridge along a major KCMO artery, while dealing with the site constraints and heavy traffic along this I-70 interchange. A number of design elements were incorporated to expedite the construction process. The new BRC Bridge carries 7 total lanes of traffic, and accommodates future widening of I-70. The three span (102' – 74' – 48') prestressed concrete I-girder structure allows for a future I-70 cross-section consisting of 6 EB lanes, 4 WB lanes, and a 3-lane WB collector-distributor that will provide the tie-in for ramps to BRC and I-435.

291 Highway Over Route 50 Rehabilitation

Route 291 over Route 50 was built as two twin bridges separated by only a small two inch gap. As such, water and de-icing salt was able to pass through the joint and collect on the sides and soffit of both structures. The bridges were experiencing deterioration along their undersides at the gap, and infiltrating the voided slab structures. In 2007, DRG designed a rehabilitation of the structures, removing a three to six foot wide section of deteriorated slab from both structures along the center gap and replacing the area with a continuous voided slab design.

In essence, the project turned two bridges into one by joining the abutments, piers, and slabs. Design of this rehabilitation included modeling of the old twin structures and the new single structure to examine the effects of the union to the substructure columns, which were designed as pinned connections at the footings.

TranSystems

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St. Louis, MO 63146
Tel (314) 997-2459
Fax (314) 569-9858

August 23, 2011

Keith Francis, PE, Assistant Director of Public Works
City of Branson
110 W. Maddux, Suite 310
Branson, MO 65616

RE: Engineering Services for Veteran's Boulevard Bridge Repairs

Dear Mr. Francis,

Repairing the Veteran's Boulevard Bridge is critical for the City of Branson to continue providing mobility along this major arterial to downtown Branson. TranSystems' highly skilled team of professionals has the expertise to fully address all the related components of improving the Veteran's Boulevard Bridge. Our St. Louis and Kansas City staffs specialize in bridge rehabilitation, and have completed numerous similar bridge projects for cities, counties and DOTs. Our experience and knowledge give us an excellent understanding to identify this bridge's specific needs and design the appropriate rehabilitation plan.

Leading our team is Allen Smith, PE, SE, a veteran bridge engineer with 21 years experience. Allen has an extensive background in bridge inspection, structural analysis methods and design techniques, scheduling, coordination, standards, and quality control. His wide-ranging experience as a project manager will enable him to effectively address the appropriate tasks needed for your project. Allen will lead our team in preparing the design plans for the repairs that successfully meet your goals.

In addition to the environmental, pedestrian/ADA, aesthetics, and traffic control staff, TranSystems has 15 bridge engineers in the state of Missouri. Our bridge engineers have the availability to immediately start working on this project as some have recently finished projects in St. Louis, Arkansas, and for the Union Pacific Railroad. TranSystems will also be using CJW Transportation Consultants for surveying and right-of-way documents. We have worked with Jay and his staff in the past and know they have extensive knowledge of Branson and can quickly provide any services that are needed.

Why Select TranSystems?

- **Knowledge** – Bridge rehabilitation is our trademark. TranSystems' comprehensive understanding of bridge rehabilitations will be invaluable in completing your bridge repair project. Allen traveled to Branson to conduct an initial evaluation of the Veteran's Boulevard Bridge and gained a more thorough understanding of the issues at hand. Additionally, our staff routinely works with railroads providing us an understanding of the Missouri & Northern Arkansas Railroad's (MNA) procedures, which will help with any access issues.
- **Experience** – TranSystems' local bridge staff comprises professionals with a proven track record in bridge engineering – *Roads and Bridges* recently recognized TranSystems as #9 of the "Top Bridge Design Firms" and we are #10 on *Engineering News-Record's* 2011 "Top Bridge Firms." Our staff has vast experience in rehabilitating bridges similar to yours. In fact, Allen has recently managed numerous similar projects.
- **Commitment** – We understand the need for highly qualified engineers and technicians to complete your project on schedule and have committed the resources to finish your design quickly and professionally.

Our team is indeed enthused about the prospect of working with the City of Branson again on repairing the Veteran's Boulevard Bridge. TranSystems has assembled a team of highly qualified individuals with the availability to help you on this critical project. If you have any questions, please contact me at (314) 749-5653.

Sincerely,

Kyle Kittrell, PE, Vice President

Project Approach

TranSystems has comprehensive resources and capabilities to rehabilitate your aging structure in downtown Branson. From the initial inspection to final design, we have restored numerous bridges in the Midwest and across the country to increase load capacity. Based on this experience, we developed the following approach, which is divided into two basic elements: an in-depth inspection and a design phase.

Task 100 – Review Material and Bridge Inspection

The objective of the in-depth inspection is to quantify the structural repairs to the Veteran's Avenue Bridge. We will review all existing documents before our site investigation to determine the safest and most efficient inspection approach in efforts to minimize traffic disruptions. During the site investigation, we will measure the repair areas in the deck, superstructure and substructure. Coordination with the City of Branson will be necessary to schedule the investigation and determine the timing and appropriate traffic control to safely inspect the bridge. We will also coordinate with the MNA Railroad for flagging and access to their property.

Initial Observations Show the Beginning of Bridge Movement

An underbridge inspection unit (snooper) will be used to access the deck soffit, beams, pier caps and columns. The snooper will enable our inspectors the access to sound the concrete, determine the limits of the delaminated concrete, and establish the size of the repair areas. ***When recently visiting the site, we observed that spans one and two were misaligned at the expansion joint located at bent two.*** A closer inspection in this area is necessary to determine the cause and possible solution. In accordance with safety laws, a rescue boat will be on site during the inspection. The boat will also be used for access to the lower portions of the river piers.

Task 200 – Agency and Utility Coordination

Coordination with the City of Branson's Utility Department, US Army Corps of Engineers (USACE) and MNA Railroad will be important in moving the project forward. To remove the water line attached to the bridge and cap the water line's exposed ends, we will coordinate with the city's Utility Department. Coordination with USACE will help determine requirements to keep the causeway clear during construction. The USACE's requirements will help determine the method of construction over or near the causeway along with the needed clearance.

Coordination with City Utilities to Successfully Remove Water Line

Our environmental scientists have relationships with USACE staff based on years of successful permitting efforts. Initiating dialogue with USACE to discuss constructability options early on will give us efficiencies in the design development to reach common ground on the best approach for this project. We can submit environmental permit applications during the concept phase as soon as horizontal limits of the proposed project can be fixed. We will perform a wetland

determination update to verify the previous wetland impact report, building upon and amending it as needed based on the assessment. If the site visit indicates that a Section 404 permit will likely be required for project impacts, we will perform a Waters of the US delineation to determine the extent of impacts, prepare a Waters of the US Report and a Section 404 Permit Application, in coordination with USACE. All components of the 404 permit will be coordinated, including any NEPA requirements. If needed, we will also coordinate with Missouri Department of Natural Resources (MDNR) in conjunction with Section 404 permit application. MDNR would be involved in the completion of the initial Storm Water Pollution Prevention Plan and Erosion Control Plan for submittal of the NPDES Notice of Intent.

TranSystems will also coordinate with the MNA Railroad to determine permitting, right of entry, and flagging requirements for the contractor. This coordination may also be needed for the initial site investigation.

Task 300 – Prepare Design Plans and Contract Documents

Preparing construction documents consistent with the City of Branson's standard specification is the objective of the project's second element – the design phase. During Task 300, TranSystems will prepare detailed plans and specifications as well as finalize an anticipated construction cost based on the plan documents.

The first step in the design phase is to develop preliminary plans containing project specific information, typical sections, plan sheet layouts showing repairs needed, and repair limits. Once these plans and an initial cost estimate are completed, the city will have the opportunity to review and provide comments. Following the city's review, TranSystems will schedule a meeting to discuss the plans and visit the project site.

After the preliminary plan comments are received from the city, right-of-way plans will be prepared to determine the exact boundaries of all parcels that must be acquired to facilitate construction. The design will then be sufficiently detailed to establish the limits of construction with confidence that they will not be changed barring unforeseen circumstances. Once this level of detail is established, the boundaries will be drawn and legal descriptions written. A TranSystems land surveyor, licensed in the State of Missouri, will prepare all legal descriptions. Hard copies of the descriptions along with electronic files will be provided to the city.

While right-of-way is being acquired, contract plans will be developed to 95 percent completion. These plans will include all modifications discussed to date, and will provide the necessary details and quantities to bid the project. In preparation of final design plans, the majority of the effort will involve structural engineering analysis and design of the proposed repairs to the bridge. With an emphasis on constructability and structural integrity, the repairs will be mapped out on preliminary plans for initial review. We will also evaluate the existing girders at this time to ensure they have the capacity to carry the additional load of the new sidewalk, fencing, and lighting.

To make certain the new sidewalk meets ADA requirements, especially in the transition areas, we will utilize the knowledge of our in-house alternative transportation expert, John Zimmermann. Aesthetics for the bridge, such as fencing, decorative form liners and new, low energy street lights, will be incorporated into the design to match the existing Branson Landing Boulevard Bridge, providing continuity between the two.

Following completion of contract plans, the city will once again have the opportunity to review and provide comments during a meeting. After addressing the city's comments, final plans and specifications, including any necessary special or technical provisions, will be submitted to the city. TranSystems also has the capability to assist the city in the project's bidding process, if desired. The engineer's estimate of probable costs will be updated after the plans are finalized. This estimate will be based on historical bids from similar projects within the city, county and recent bid tabulations from MoDOT for the Branson area.

Task 400 – Project Management

Project management will occur throughout the life of the project. Meetings with the City of Branson will be documented as well as milestone project review meetings at the preliminary and final plan stages, and discussion of aesthetic elements and decorative street lights.

Proposed Project Schedule

During the construction phase, we propose closing the bridge and routing all traffic over Route 65 or Branson Landing Boulevard. This detour will allow the contractor to focus solely on the bridge and not traffic – resulting in a shorter construction schedule and reduced cost.

Our schedule below will reduce the time required to develop the plans, which means we will have the plans, specifications and engineering estimate ready in July 2012. This shortened time frame will allow the city to let the project in early fall enabling construction to be completed before summer tourist traffic begins. Due to our accelerated schedule, we may need to identify certain specialty items, such as street lighting, to be a city furnished item to the contractor. Sometimes these specialty items require a significant amount of time, so getting a head start on determining the materials will be invaluable in accelerating the project.

Veteran's Boulevard Bridge Repairs		2011			2012					
		O	N	D	J	F	M	A	M	J
	Interview and Selection									
	Negotiate Contract									
	Notice to Proceed									
Task 100	**Review Material & Bridge Inspection**									
101	Review Prior Biennial Structural Evaluations									
102	Conduct Site Visits									
Task 200	**Agency & Utility Coordination**									
201	Utility Department									
202	US Corps of Engineers									
203	Missouri and Northern Arkansas Railroad									
Task 300	**Prepare Design Plans**									
301	Prepare Preliminary Plans									
302	Conduct Field Surveys									
303	Prepare Right-of-Way Plans (if necessary)									
304	Prepare Final Plans									
305	Prepare Specifications									
306	Review Periods									
307	Final Cost Estimate									
308	Final Submittal									
Task 400	**Project Management**									
401	Project Meetings (Client)									

Similar Bridge Design Experience

Designing bridges using steel, reinforced concrete, prestressed concrete and post-tensioned concrete has been the cornerstone of TranSystems' business since our inception. Our structures are designed as simple, multiple or continuous spans; and viaducts that carry highways and pedestrians over roads, rivers, and railroads using various cast-in-place and precast substructure elements under a variety of foundation conditions. Our team excels in providing rehabilitation design services including evaluating existing structure, developing preliminary and final construction cost estimates, as well as designing and detailing repairs.

Truman Road Rehabilitation over the Blue River, Kansas City, Mo.

For this three-phase project, TranSystems provided a field investigation and concept study; final design, plans and specifications; and bid process assistance and construction inspection for rehabilitation of the Truman Road Blue River viaduct. Repairs included replacing the bridge deck, making the existing girders composite, repairing and replacing steel bearings and repairing concrete substructure elements through a chloride extraction process. The City of Kansas City awarded TranSystems a bonus in recognition of our outstanding effort in completing the final design plan package in only three months to meet the deadline for federal funds qualification, rather than the nine months projected by the study.

Construction Cost: $11.7 million
Completion Date: October 2008

Route 125 Replacement, Greene County, Mo.

TranSystems performed the preliminary and final design of this bridge replacement project for the MoDOT through its Safe and Sound On-Call Program. The scope of work included design of the approach roadway, hydrology and hydraulic design, bridge design, and limited construction phase services. Submittals to MoDOT included a bridge design survey, bridge memorandum, bridge design layout, final plans and Special Provisions.

Construction Cost: $2.5 million
Completion Date: December 2011

Main Street Viaduct over KCT Tracks, Kansas City, Mo.

TranSystems performed a condition survey, designed structural repairs, and provided construction support services for the rehabilitation of a seven-lane, 1,232-ft.-long viaduct over the KCT Railway tracks near Union Station. The project included replacement of the bridge deck joints, repair to substructure elements and retaining walls, and the modification and replacement of the bridge deck drainage systems. The project also included design of traffic control for construction, signalization evaluation at the ends of the viaduct, and permanent signing design. The work was accomplished with minimal disruption to adjacent property owners.

Construction Cost: $1.5 million
Completion Date: October 2006

Metro Eads Bridge, St. Louis, Mo.

The historic Eads Bridge was the first crossing of the Mississippi River. To ensure the bridge will continue to serve as a key transportation artery, TranSystems was selected to complete a detailed inspection. The first phase's inspection of the structure resulted in needed repairs to the structural steel, masonry, and concrete areas. Following the inspection, TranSystems established criteria for each of the repair types and made recommendations to Metro. We are currently completing the final design for the rehabilitation.

Construction Cost: $25 million
Completion Date: Anticipated December 2012

Route 150 Replacement, Greenwood, Mo.

TranSystems prepared final design, plans and specifications for an eight-span, 800-ft. long continuous composite steel plate girder bridge on Route 150 east of Greenwood. The $5 million bridge over the Union Pacific Railroad tracks and Big Creek replaced an existing steel beam bridge and was built in two stages to maintain traffic. TranSystems delivered final plans for the complex, eight-span bridge over the severely skewed rail line two months ahead of schedule at the end of 2006 to meet MoDOT funding requirements.

Construction Cost: $5 million
Completion Date: November 2006

12th Street Viaduct, Kansas City, Mo.

The 12th Street Viaduct has been a landmark and a vital conduit for traffic since it was built in 1915. In part due to the bridge's eligibility for the National Register of Historic Structures, the city sought to repair and rehabilitate the viaduct to stretch its useful life. TranSystems was retained by the city to inspect the structure, assess its condition, estimate the extent and cost of work required to rehabilitate the viaduct, review alternatives to rehabilitation, evaluate traffic loads, investigate funding options, and recommend a course of action for the project. The solutions recommended by TranSystems and adopted by the city involved the use of electrochemical chloride extraction.

Construction Cost: $15 million
Completion Date: Anticipated March 2012

Oak Street Viaduct, Kansas City, Mo.

The first phase of work on the Oak Street Viaduct involved the inspection, analysis, and load rating of the structure. Recommendations for the rehabilitation or replacement of the structure and cost estimates were also developed. The second phase was the design of the rehabilitation and the widening of the bridge, including structural repairs, strengthening and widening, substructure modifications, deck replacement, placement of a 16-in. water line on the structure, and approach modifications. The final phase was the construction inspection.

Construction Cost: $3 million
Completion Date: 1989

Working with the MNA Railroad in Harrisonville, Mo.

TranSystems performed a sidewalk study for Commercial Street as part of its on-call services contract. The project involves reviewing the potential of providing pedestrian access along the Commercial Street corridor in Harrisonville, Mo., near the MNA railroad tracks. While there is current pedestrian activity along Commercial Street near the MNA railroad tracks, there are no pedestrian facilities in this area. Field observations reveal that pedestrians are currently crossing the railroad tracks at grade. In an effort to provide a safer crossing condition for pedestrians this scope of work assesses different options for providing pedestrian facilities.

Construction Cost: $9,698 (fee)
Completion Date: September 2011

Our History in Completing the Design of Related Projects on Time and At/Under Budget

Developing mutually satisfying budgets and schedules with our clients, and adhering to them throughout the life of a project, are each critical to a successful project. TranSystems works with our clients to determine the most effective path forward toward project completion as well as to discover and execute economies without compromising the quality of the project. TranSystems' formal project management process ensures projects are completed within our clients' parameters, and focus on the following key components.

- Negotiate and reach a consensus with the client regarding project scope, budgets, and schedules.
- Develop a detailed schedule of all project activities that highlights their interrelationships and determines the project critical path.
- Establish a budget for each task.
- Create a baseline of project activities with schedules and budgets.
- Compare actual project progress against this baseline.
- Report on project activities during each month including actual versus baseline progress (schedule) and the actual versus baseline expenditures of budget.

The aforementioned project tracking methods allow TranSystems the flexibility to make adjustments throughout the project to ensure that the project meets client expectations. To specifically show our ability to design bridges on time and at/under budget, we have listed information for three projects.

Project Name	Planned Budget	Final Budget	Planned Completion Date	Actual Completion Date
kcICON, Kansas City, Mo.	$60,000,000 *(TranSystems' Portion)*	$60,000,000 *(TranSystems' Portion)*	Summer 2011	December 2010
Route 150 Bridge Replacement, Greenwood, Mo.	$5,000,000	$5,000,000	January 2007	November 2006
Route 152 and Ambassador Drive Interchange, Kansas City, Mo.	$7,800,000	$7,700,000	April 2005	March 2005

The TranSystems Team

The local bridge staff at TranSystems comprises professionals with a proven track record in bridge engineering. *Roads and Bridges* recently recognized TranSystems as #9 of the "Top Bridge Design Firms" and we are #10 on *Engineering News-Record's* 2011 "Top Bridge Firms." Our staff has vast experience in rehabilitating bridges from simple single spans to complex historical bridges.

Allen Smith, PE, SE, Project Manager

21 years experience

Allen is responsible for bridge project management, bridge design engineering assignments, planning and inspection of highway and railroad structures. His design experience includes truss rating and rehabilitation, prestressed girders, plate girders, box culverts, post-tensioned substructures and structural steel repairs. His bridge inspection experience includes over 1,450 bridges, more than 60 of which were major river crossings. Allen is the project manager and bridge inspection team leader for the Eads Bridge Rehabilitation project in St. Louis. The Eads Bridge is a steel deck, truss arch bridge over the Mississippi River that carries commuter rail and is the oldest bridge over the Mississippi River. The project includes annual in-depth inspection, inspection report, repair recommendations, rehabilitation plans, and construction inspection.

Ron Temme, PE, Quality Control

36 years experience

Ron recently joined TranSystems to perform quality assurance/quality control for TranSystems' Missouri bridge engineering projects. He brings 36 years of experience with MoDOT's Bridge Division, where he most recently served as Structural Liaison Engineer. He has extensive experience in providing oversight of consultants' engineering services for bridges on the state highway system and ensuring compliance with FHWA's bridge oversight requirements. Ron prides himself in delivering projects that are completed correctly, timely and exceed expectations.

Bill Early, PE, Bridge Engineer

17 years experience

Bill is a seasoned structural engineer in bridge design, construction, inspection, and management. His background has given him the ability to manage the design of numerous challenging bridges in urban areas, coordinate with railroads during design and construction, and manage construction. Bill also brings an in-depth understanding of municipal bridge projects as he spent more than three years with the City of St. Louis' Board of Public Service, where he most recently served as the Chief Engineer of the Bridge Division. Since joining TranSystems in September 2010, Bill has been part of two large projects – the rehabilitation design for the Eads Bridge in St. Louis and nationwide inspection of Union Pacific Railroad's steel bridges.

Jared Wigger, PE, Bridge Engineer

12 years experience

Jared is a senior bridge engineer with a considerable amount of experience in the design and inspection of highway and railroad bridges. Jared is responsible for bridge project management, design engineering assignments, planning, inspection and ratings of highway and railroad structures. His bridge inspection experience spans 10 years and includes over 550 bridges, more than 45 of which were fixed and movable major river crossings. Jared is experienced in the use of technical access techniques to perform bridge inspections. His design experience includes both new and rehabilitation, the majority of which involved long span and movable bridges.

John Zimmermann, PE, LEED Green Associate, Pedestrian / ADA Engineer

21 years experience

John is TranSystems' alternative transportation leader and brings 21 years of experience with ADA upgrades and sidewalk/trail design. He also leads TranSystems' national sustainable transportation efforts. His experiences in managing/designing projects that involve aspects of ADA regulations and standards includes the Rock Creek Trail in Mission, Kan., Fifth Street in Lee's Summit, Mo.; St. John Avenue Streetscape in Kansas City, Mo., among many others. With John's specialized expertise in sidewalk design as well as his knowledge of the ADA regulations, he will be invaluable in successfully designing the bridge's sidewalk.

Jim Stanek, PE, PTOE, Traffic Engineer

25 years experience

Jim serves as a project engineer or project manager for varied traffic engineering assignments. His responsibilities include traffic engineering design and analysis, with specific involvement on signing and pavement marking design, traffic engineering studies, signalization projects, work zone traffic control and intersection geometric design. Jim is extremely familiar with MoDOT standards as he is the project engineer responsible for conducting traffic engineering studies for several cities throughout the state under MoDOT's Traffic Engineering Assistance Program.

The TranSystems team has specialized expertise in rehabilitating bridges from the initial inspection to the design of repairs.

Barb Frost, PE, Environmental Permitting

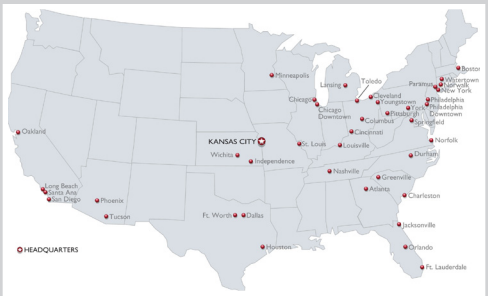
15 years experience

Barb functions as one of TranSystems' regional environmental leads and is a member of TranSystems' national Environmental Planning Practice Community. Her extensive experience in writing and reviewing Categorical Exclusions (CE), Alternatives Analyses (AA), Environmental Assessments (EA), and Environmental Impact Statements (EIS) for transportation projects enables her to guide clients through the process with ease. She served as deputy project manager of the AA and draft EIS for a study of fixed guideway transit alternatives to address growing traffic congestion problems on Branson's 76 Strip.

Kenneth Messick, PLS, Surveyor (CJW)

27 years experience

Ken has been responsible for the survey services rendered for more than 100 bridge projects in southwest Missouri. The survey responsibility for these bridges was variable, but usually included initial topographic survey, existing right-of-way determination, setting control monuments, new right-of-way document preparation, and construction staking. Ken also managed the acquisition of survey information for 78 bridges in MoDOT's Southwest and Southeast Districts in southern Missouri for the Missouri Safe and Sound Bridge Initiative.



GEOGRAPHIC LOCATION OF OUR PRINCIPAL OFFICES

TranSystems' St. Louis and Kansas City offices will provide engineering services for the Veteran's Boulevard Bridge Repairs. Leading this project will be Allen Smith, who is located in St. Louis.

The St. Louis office currently has 12 professionals, while the Kansas City office has 158 professionals. Between the two Missouri offices we have 15 bridge engineers. Our two offices regularly work together on projects across the state, and we have found success in this approach.

Additional resources from our 40 other offices located across the country will be available if needed. Throughout the firm, TranSystems employs more than 1,000 professionals.

August 22, 2011

Re: Proposal for Engineering Services
Veterans Boulevard Bridge Repairs

Mr. David H. Miller, P.E.
Director of Public Works
110 W. Maddox, Suite 310
Branson, MO 65616

Attn: Mr. Keith Francis, P.E.


Branson Landing Boulevard Bridge over Roark Creek

Dear Mr. Miller,

Burns & McDonnell is pleased to provide this proposal for engineering services for the repairs and improvements to the Veterans Boulevard Bridge over Roark Creek. Our transportation practice has an extensive staff of experienced engineers in the municipal, highway and bridge departments. Our depth and range of bridge design capabilities has been significantly expanded with the 2010 acquisition of Harrington & Cortelyou (H&C). H&C has an extensive background in the design of bridges and structures ranging from box culverts to Missouri River bridges.

We have recently completed three significant projects that have had a major impact on Branson's transportation system: the Skaggs Roundabout, the Branson Landing Boulevard Bridge over Roark Creek, and the recently opened Branson Landing Boulevard Bridge over Lake Taneycomo.

We are well-versed in the MoDOT philosophy of "practical design", and we will bring an experienced and cost-conscious approach to this project for the City of Branson. Most importantly, we understand your concern for project cost versus service life for this rehabilitation project.

Consider the following:

- We know this site better than anyone, because **we performed the design for the adjacent Branson Landing Boulevard Bridge and the Skaggs Roundabout**. We understand the desired aesthetics, and also the construction access and permitting issues for the bridge.
- **We have in-depth experience in the evaluation, rehabilitation and retrofit of bridges**, such as for Blue Mills Road in Jackson County, Missouri, and the pedestrian retrofit for the Route 269 Missouri River Bridge in Kansas City, Missouri.
- **Our engineers are experienced in complex and high volume traffic control plans** for construction projects, including roundabouts and associated signage. We recognize the importance of a safe, efficient and well-marked detour for Veterans Boulevard during construction.

Included in this submittal is a proposed project schedule; we will work with the City to modify it as necessary. We are committed to the success of this project and will work diligently until all work is complete. We look forward to continued success working with the City of Branson.

Sincerely,
BURNS & McDONNELL ENGINEERING COMPANY, INC.

Kevin R. Eisenbeis

Kevin R. Eisenbeis, P.E., S.E.
Director of Bridges

9400 Ward Parkway • Kansas City, Missouri 64114-3319
Tel: 816-333-9400 • Fax: 816-333-3690 • www.burnsmcd.com

SIMILAR PROJECT EXPERIENCE

Burns & McDonnell is well-qualified to provide engineering services for the rehabilitation of the Veterans Boulevard Bridge. With the acquisition of Harrington & Cortelyou, our project team provides recent and relevant design experience:

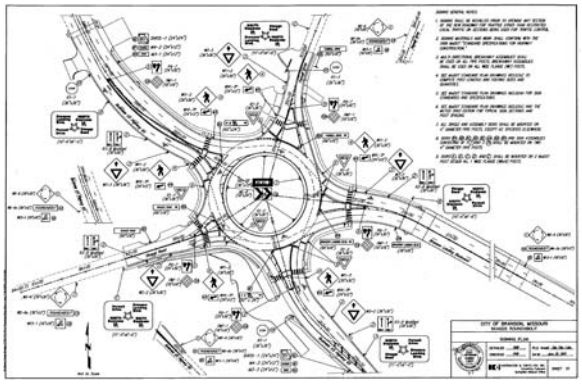
Branson Landing Boulevard Bridge over Roark Creek - Branson, Mo.

This structure is located immediately downstream from the Veterans Boulevard Bridge, and was opened to traffic in 2006. We provided bridge and roadway design services for the City of Branson, including design calculations, construction plan and specification documents, and construction consultation for both the Branson Landing Boulevard Bridge and the adjacent Skaggs Roundabout. **We are intimately familiar with the complex geometrics of the roundabout and adjacent bridges**. Our work on this project parallels the work required on the Veterans Boulevard Bridge in a number of ways:

Skaggs Roundabout, Branson Landing Blvd. Bridge & Veterans Blvd. Bridge

- We dealt directly with the US Army Corps of Engineers, and coordinated the permitting requirements for the causeways used during construction. Similar causeways may be required for the work on the Veterans Boulevard Bridge.

- The wetland delineation in the immediate vicinity was described in our bridge plans, and the impact of a work platform area was shown. We are aware of these limits as they relate to the proposed work on Veterans Boulevard Bridge.



- The staged construction of the roundabout required complex traffic staging and extensive traffic control devices. The roadway plans we developed for this roundabout included detailed description and placement of these items. The closure of the Veterans Boulevard Bridge will require similar traffic control details for the roundabout. **We understand the importance of emergency vehicle and hospital access.**

- The utility requirements, for both the abandoned water line on the Veterans Boulevard Bridge and for the utilities in service running beneath the bridge adjacent to Roark Creek, are familiar to us through our work on the Branson Landing Bridge. In fact, relocation of the sanitary sewer line beneath the bridges was part of our work for the Branson Landing Boulevard Bridge, and was described in detail in our construction plans.

- We are aware of the tight right-of-way requirements for this project, due to our work on the roundabout geometrics and construction staging. For the Veterans Boulevard Bridge project, we will once again work closely with the City to keep the limits of construction and construction easements within the limits of existing right-of-way and City owned property, if possible.
- Our vehicular bridge projects routinely cross railroad right-of-way, such as at the Route 19 Hermann Missouri River Bridge and the Route 269 Chouteau Missouri River Bridge. In addition, we have provided design services directly to the Union Pacific Railroad, such as for the recent swing span rehabilitation over the Calcasieu River in Louisiana. We understand how to communicate with the Union Pacific, and how to structure contract specifications to accommodate special requirements, such as flagmen.
- We understand your desire to match the aesthetic treatments provided on the Branson Landing Boulevard Bridge. We agree that these details enhance this structure, and we would be pleased to provide the same aesthetic yet practical attention to the lighting, fencing and rails for the Veterans Boulevard Bridge.

Blue Mills Road - Jackson County, Mo.


Blue Mills Road – Before Rehabilitation

We performed **an in-depth structural inspection, prepared an inspection report and developed rehabilitation plans** for this three span bridge. The existing bridge had significant deterioration of the entire concrete slab and corrosion of the structure under the expansion joints. Bridge repairs, performed in 2010, involved a new concrete deck, barrier curbs, expansion joints, replacement of rocker bearings at the abutments, repairs to structural steel at expansion joints and substructure repairs. The new

bridge deck was widened slightly to provide additional shoulder width. The slab was also thickened to provide additional concrete cover to the reinforcing steel for better durability. A load rating analysis of the existing girders was performed to verify their structural capacity for the increased loading. This structure also carries gas and water lines which required protection during the rehabilitation.

Blue Mills Road – After Rehabilitation

Safe & Sound Bridge Route B over Knob Creek - Cass County, Mo.

Knob Creek Bridge – Before Rehabilitation

We recently provided design services to MoDOT for six bridges as part of the Safe and Sound Bridge Improvement Program. **Each bridge was inspected to determine rehabilitation cost** and then compared to complete replacement cost. Five of the bridges were rehabilitated by using new superstructure on existing bridge foundations.

The rehabilitation costs were significantly lower than complete replacement and also greatly reduced the closure time for these routes. Each bridge had an extremely accelerated design schedule. We met every deadline and continued to be selected by MoDOT for additional projects due to outstanding performance.

Knob Creek Bridge – After Rehabilitation

Route 269 Chouteau Missouri River Bridge Bicycle and Pedestrian Retrofit - Kansas City, Mo.

The scope of work for this project included the addition of 8 ft. multi-use paths and 5 ft. bike lanes to both sides of the existing bridge and approaches. The retrofit involved adding barrier curbs on the existing slab, pedestrian railings and fence, curb ramps, and modification to the expansion joints and drain inlets to **provide bicycle-safe and ADA compliant pathways**.

In addition, this project included an on-road bike lane off the ends of the bridge, and additional work for connection to existing sidewalks. The project also required an extensive traffic control plan.

Route 269 Missouri River Bridge Joint Use Path

BURNS & MCDONNELL AND HARRINGTON & CORTELYOU, A HISTORY OF SUCCESS

New Lake Taneycomo Bridge (on left)

New Branson Landing Boulevard Bridge over Lake Taneycomo - Branson, Mo.

We provided design services to MoDOT for a new bridge over Lake Taneycomo, which parallels an existing arch bridge. This new structure, which opened in December 2010, provides a vital link between Branson Landing Boulevard and a new roundabout in Hollister. The 900-foot bridge provides both prestressed concrete and steel spans, and

included many practical design measures to keep the project on budget. We worked closely with the City of Branson to provide adequate pedestrian clearance to the adjacent campground, and also to avoid impact to an existing sanitary sewer line. In addition, a late revision to the bridge profile, due to floodway considerations, required significant changes to our original design. We were able to raise the bridge profile and lengthen the spans, and still submit revised construction plans **ahead of schedule**. For our efforts on this project, we received a **MoDOT consultant rating of 4.9 out of 5.0**.

96th & 108th Street Bridges over Route 169 - Kansas City, Mo.

We recently submitted final design plans for two new interchanges on Route 169 in Clay County. This project had an extremely accelerated design schedule, and the work was completed on time. The project was a combined funding effort between MoDOT and the City of Kansas City, Missouri. The two new overpass bridges will become future Kansas City parkways.

Architectural Drawing of Route 169 Bridge

Multi-use paths and aesthetic enhancements were provided on the bridges. We also provided **design of four interchange roundabouts** near each end of the bridges. Extensive use of practical design allowed significant cost savings to the bridges and approach roadways. The cost savings allowed bike lanes, protected sidewalks and **aesthetic enhancements** to be added to the bridges while **maintaining a strict project budget**.

OUR TEAM

Founded in 1898, Burns & McDonnell Engineering Company, Inc. is a 3,000 person internationally recognized architectural/engineering firm, headquartered in Kansas City, Missouri. The firm maintains branch offices in St. Louis, Missouri; Denver, Colorado; Houston, Texas; Chicago, Illinois; San Diego, California; Atlanta, Georgia, Phoenix, Arizona, and Miami, Florida; as well as several project offices across the country. Our bridge department is located in Downtown Kansas City, Missouri.

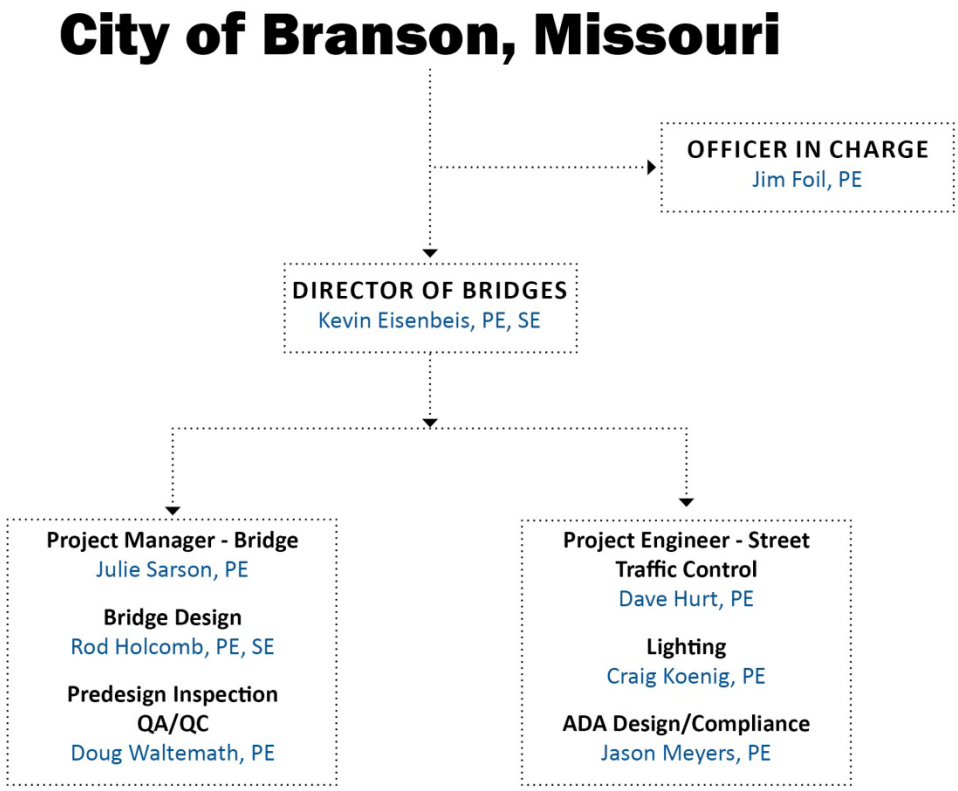
Our team includes the following personnel who will be providing leadership for the Veterans Boulevard Bridge Repair Project. All are located in Kansas City:

Kevin Eisenbeis, P.E., S.E., Director of Bridges. Kevin has 31 years experience and serves as project engineer and principal designer on many of the firm's major bridge projects. His experience includes all aspects of the design and preparation of construction plans for highway and railroad bridge projects. His design experience includes long span and prestressed concrete structures, steel trusses and movable bridges. He also has experience in the condition inspection of bridges and supervision of construction on several of the firm's projects. Kevin served as Principal in Charge for the Branson Landing Boulevard

Bridge, Skaggs Roundabout and Lake Taneycomo Bridge projects.

Julie Sarson, P.E., Project Manager. Julie has 17 years experience in the design and rehabilitation of conventional and long span bridges. Her expertise includes the production and QA/QC of quality construction plans and specifications. As Project Manager for the Branson Landing Boulevard Bridge over Lake Taneycomo, she developed a successful working relationship with MoDOT district personnel, as well as the City of Branson. She assisted in the incorporation of aesthetic details for the 96th & 108th Street project, as well as the pedestrian retrofit for the Chouteau Missouri River Bridge project.

Dave Hurt, P.E., Project Engineer. Dave has 19 years of experience in roadway design with both Burns & McDonnell and MoDOT. His expertise includes both municipal roadway design and highway design, with significant background in staged construction, traffic control, construction plans development, and QA/QC coordination. He assisted in the development of aesthetic details for the 96th & 108th Street project, in addition to providing all roadway design elements including pavement markings, signing, staged construction, and traffic control for the roundabouts. He also provided all QA/QC for the Heart of America pedestrian retrofit project in the City of Kansas City, Missouri for MoDOT.



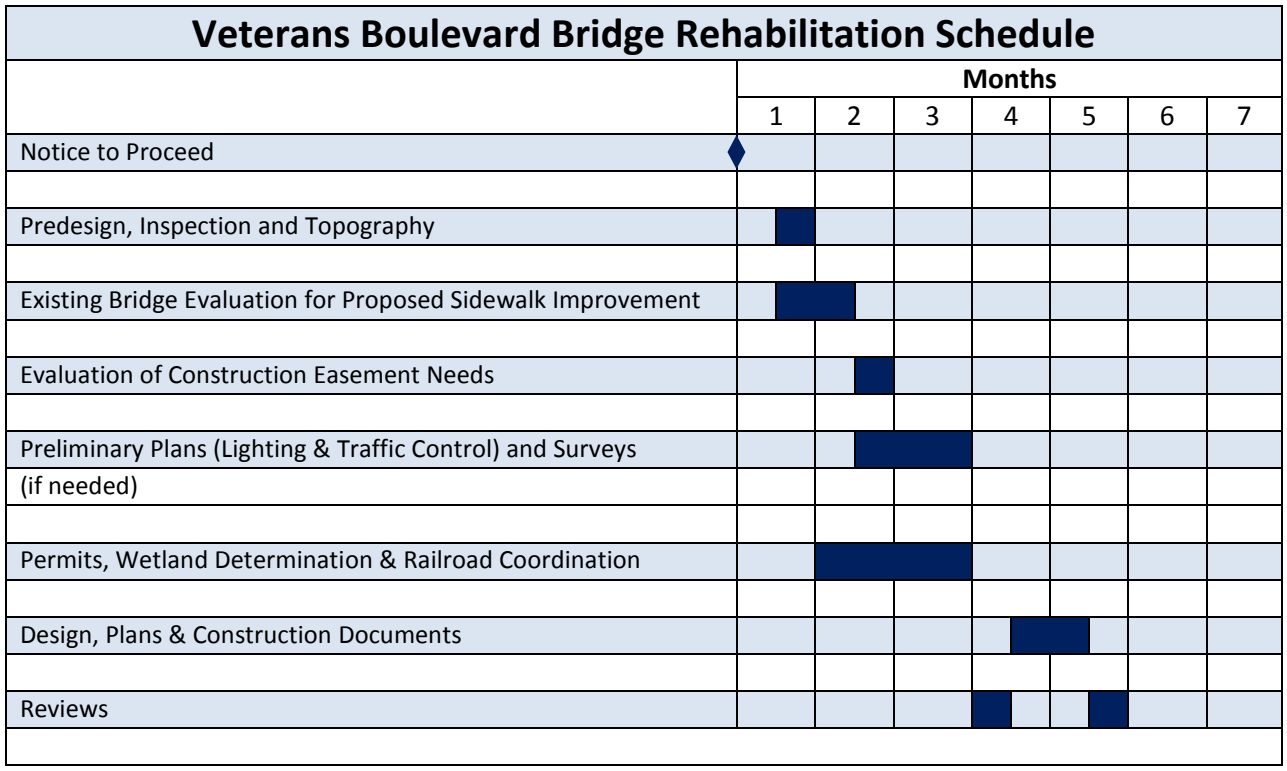
PROJECT APPROACH

Burns & McDonnell is committed to providing quality design services, within budget, to our clients. In addition, we recognize the importance of the preliminary phase of the work for the Veterans Boulevard Bridge. Our approach to this project will include the following steps:

1. Meet with the City of Branson to address specific concerns and requirements pertaining to the project location during inspection and rehabilitation work. This includes issues such as site access, closure windows and traffic control measures.

2. Provide a load rating of the existing structure, both "as is" from existing plans and with the proposed sidewalk, barriers and lighting improvements. This will indicate if the improvements can be accommodated, and at what cost. Other preliminary estimates can include, at the City's request, cost estimates for superstructure-only replacement and also total structure replacement. If desired, we would provide the City with a cost versus service life study, including several options for rehabilitation or replacement.
3. If rehabilitation and the desired modifications are deemed feasible we would perform an inspection to determine details of repairs and bid quantities. The scope of the inspection will be determined in early discussions with the City. Access to all surfaces of the bridge underside and the substructure is expensive. If a 100% sounding is performed in the design phase those access costs would be incurred twice. It may be desirable to determine the estimated quantities for the hard to access areas visually in the design phase. The 100% sounding and delineation of the concrete surface repair areas could be done in the construction phase after the contractor has built his access and mobilized equipment to access all the areas needing work.
4. If the structure is sound and can accommodate the improvements, detailed design will be completed, and construction plans and specifications will be produced for bidding. An estimated construction cost will be included. All of our design work is checked independently by a licensed engineer, as a part of our internal quality control measures.
5. We will assist the City in the advertisement, bidding and award of the project, similar to the services we provided for the Branson Landing Boulevard Bridge. We will be available to answer questions from prospective bidders, due to our familiarity with the structure from the detailed inspection.
6. Construction services will be provided through technical support to the City and site visits as requested. We will conduct a field review of the project at completion, and provide the City as-built documents.

PROJECT SCHEDULE



We Like Branson!

Both Burns & McDonnell and Harrington & Cortelyou have enjoyed working in the Branson area on a variety of projects. We look forward to providing exceptional services to the City of Branson with our combined expertise.

Branson Landing Boulevard Bridge over Roark Creek

This project entailed the design of a six-span, 562 foot long bridge over the Roark Creek arm of Lake Taneycomo. Design features included pedestrian rail fence, a utility raceway, and special lighting to match the Branson Landing development. The bridge serves as the primary entrance into the Branson Landing Development.

PROJECT INCLUDED:

- Preliminary Design
- Coordination with Property Owners
- Utility Coordination
- Construction Phasing, Traffic Control Plans
- Right-of-Way Documents
- Coordination with Multiple Projects under Design Adjacent to this Project
- Final Designs, Plans and Specifications
- Construction Inspection

Branson GateOne Airport Branson, Missouri

We provided design and construction administration services for a new privately funded, public use commercial service airport in Branson, Missouri and the Tri-Lakes Region of southwestern Missouri. This airport model is the first airport in the continental US to be built using private funds.

PROJECT INCLUDED:

- 7,140 ft. long runway and connector taxiways
- 4 gate, 58,000 square feet terminal
- Air traffic control tower
- Runway and taxiway edge lighting
- Above ground fueling facility
- 3-mile long access road with 2 bridges
- A rental car facility and 500 vehicle parking lot with terminal roadways
- A wastewater treatment plant and underground water wells with pumping station

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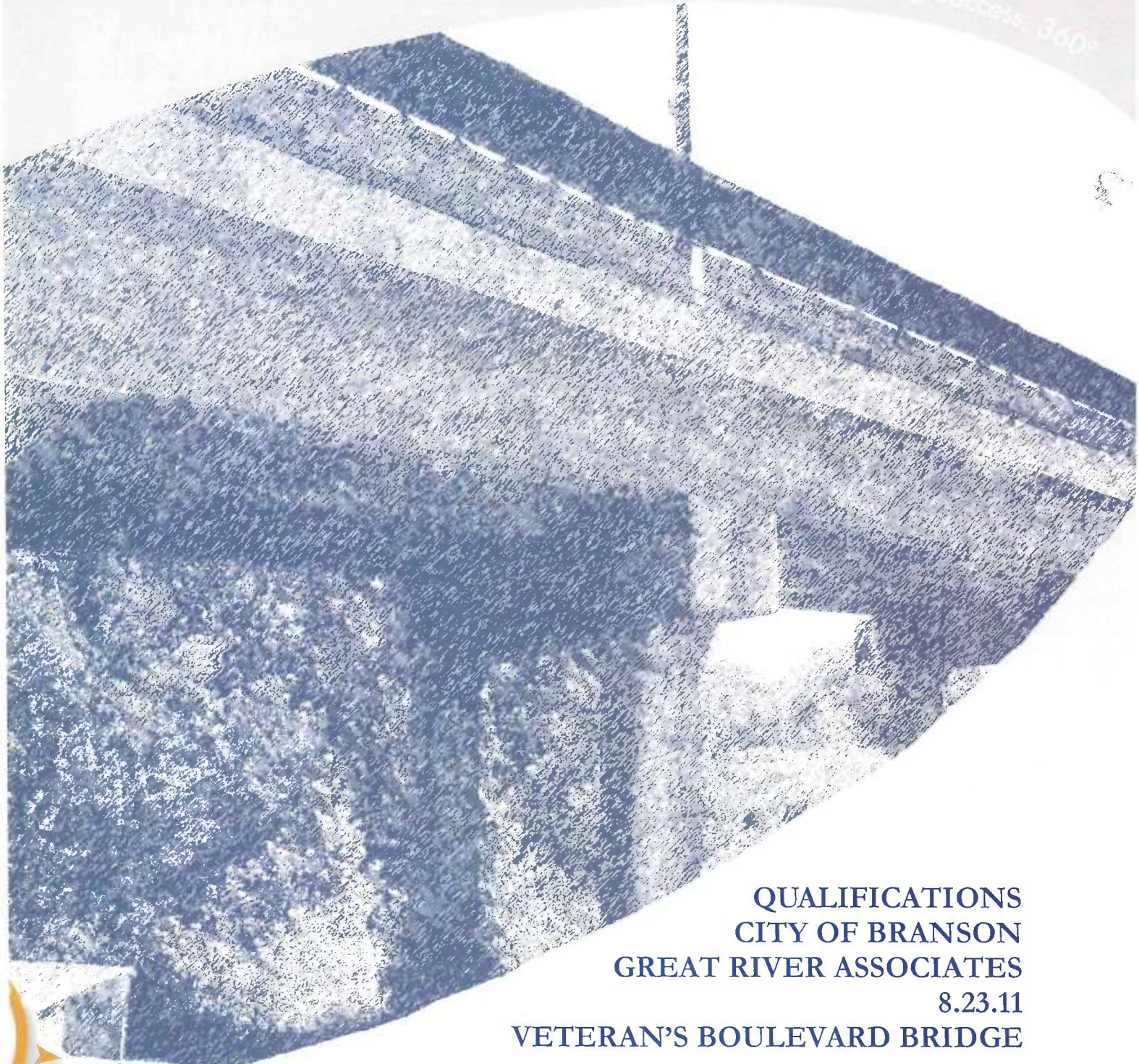

QUALIFICATIONS
CITY OF BRANSON
GREAT RIVER ASSOCIATES
8.23.11
VETERAN'S BOULEVARD BRIDGE

2826 South Ingram Mill Road Springfield, Missouri 65804 Phone: 417.886.7171 Fax: 417.886.7591 www.greatriv.com

GREAT RIVER ASSOCIATES

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August 23, 2011

City of Branson, Missouri
Attn: Keith Francis, P.E.
Assistant Director of Public Works
110 W. Maddux, Suite 310
Branson, MO 65616

Re: Engineering Services for the Veteran's Boulevard Bridge Repairs
"Proposal for Engineering Services"

Dear Mr. Francis,

Great River Associates is excited to submit our qualifications for the City of Branson Veteran's Boulevard Bridge Repairs Project. Great River Associates has worked hard to establish itself as the bridge design leader in Southwest Missouri. We have completed over 100 bridge replacement and/or rehabilitation projects. Currently, our client list includes Greene, Christian, Taney, Stone, Polk, Lawrence, Hickory, Laclede and Dallas counties. In addition to county bridge work, Great River has worked on multiple bridge projects with MoDOT and completed bridge projects for the cities of Springfield and West Plains.

Great River is a locally based company with a strong presence in the Branson area; however, Great River has performed only limited work for the City of Branson itself. Great River has designed a sustainable parking lot for future expansion at the landing and successfully completed the Rainbow Shoals Sewer project. After reviewing the Veteran's Boulevard Bridge requirements we feel that our experience and commitment to developing a working relationship with the City of Branson will result in not only a successful project, but also a successful partnership.

Great River Associates has set a precedence of delivering exceptional service and product quality to our clients. We encourage you to contact any of the clients listed in our references section for comment on our Bridge Project experience. Great River is confident that the best way to evaluate our ability is to simply ask our clients. We take pride in our projects and are proud to put our name on each one.

The Great River Team is excited at the possibilities that this project brings. Many of us spend our personal time in the Branson area; enjoying the areas recreational resources and often taking our families to the Landing for shopping and dinner. This is a great opportunity for Great River to be involved with a project that is meaningful, not only to the general public but also to our families.

We thank the City of Branson for the opportunity to submit our proposal for the Veteran's Boulevard Bridge Project, if you have any questions or if we can provide any more information please feel free to contact us anytime at (417)886-7171.

Sincerely,

Spencer Jones, P.E.
Principal
417.860.0173 (Cell)

Jason Sivils, P.E.
Structural Department Manager
417.860.4909 (Cell)

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Meet the Project Team

Spencer Jones, P.E.—Project Manager—Mr. Jones is a principal at Great River and has served as project manager on many large bridge and roadway projects. This list is extensive and includes projects such as "Silver Dollar City Entrance Road" and "Route 63 Bridge Rehabilitation Projects". Mr. Jones, has a proven record of customer satisfaction and helping to ensure projects are completed both on time and on budget.

Jason Sivils, P.E.—Project Engineer—Mr. Sivils is the head of the Structural Engineering Department at Great River Associates, he has worked as both project manager and design engineer on many bridge projects. On this project Mr. Sivils will help each of the project team members in their roles, as well as help communicate with the City of Branson the status of the project and complete final review of the project.

James Ouellette, E.I.—Design Engineer—Mr. Ouellette is a talented structural designer for Great River. Before joining Great River Mr. Ouellette has worked on many projects ranging from structural design of multiple Bass Pro Shops across the nation to the River Walk Pedestrian Bridge currently at the landing in front of the fountain show. Mr. Ouellette has experience in concrete and steel design in addition to being well versed in many computer modeling programs.

Steve Brown, P.E.—Regulatory Specialist—Mr. Brown is a certified floodplain manager and has handled permitting with many agencies including the Army Corps of Engineers, Missouri Department of Conservation, State Historic Preservation Office and the Department of Natural Resources. In addition, Mr. Brown has worked on projects with FEMA, SEMA and MoDOT. Mr. Brown will be in charge of permitting and coordinating with regulatory agencies. His military background helps to ensure that no details are overlooked.

Jerany Jackson, L.A.—Special Services—Ms. Jackson's role on this project will be to ensure aesthetic appeal of the final project along with ensure ADA compliance. Ms. Jackson has worked on the "National Grade Separation Feasibility Study" for a over/under pass for pedestrians to cross National Avenue in Springfield, Missouri on the Missouri State University Campus. In addition, Ms. Jackson is completing multiple sidewalks projects utilizing MoDOT Enhancement Funds.

Brian Viele, P.L.S.—Land Surveyor—Mr. Viele will be in charge of the survey aspects of the project including the topographic survey, required construction staking and Right of Way document production. Mr. Viele has experience within the area on many road and bridge projects, including MoDOT projects. Mr. Viele also teaches surveying at Missouri State University part time.

All of the staff on this project are located within our primary office. Our primary office is located in Springfield, Missouri, behind PFI. For more detailed information on each of the above individuals please reference our firm's qualifications on file with the City of Branson.

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Similar Work Experience

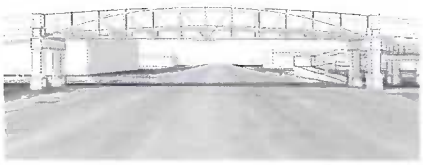
Great River Associates has completed over 100 bridge projects throughout the area. These projects include both bridge replacements and rehabilitations. Great River has experience with ADA compliance design, most recently with the Williams Pedestrian Bridge for the City of Springfield, Missouri. Below are just a sample few bridge projects that posed similar challenges to our design staff as will be faced by your project:

Washington Avenue Bridges—West Plains, MO—This project included the construction of a vehicular bridge and pedestrian bridge. To achieve the look desired by the client within the allowable budget Great River designed two separate structures to be placed adjacently. This design ensured safety for both pedestrians and motorist while obtaining the look the client desired.

Route 63 Texas County Bridges — Great River was design engineer for two (2) bridge projects on Route 63 in Texas County as part of MoDOT's Safe and Sound Bridge Replacement program. This project included the following: evaluation of existing structure, replacement of bridge deck and widening and traffic control design. Site visits and reading of historic plans were also required to complete this project. These projects were completed under original budget.

Fassnight Park Bridges—City of Springfield, MO—Great River was hired by the contractor to complete the design three (3) bridges at Fassnight Park in Springfield, MO. The projects all included pedestrian sidewalks and strong emphasis on esthetic appearance. We were able to save cost for the city and design these structures using locally produced elements. The structures were on Camp bell Avenue, Grant Avenue and Main Avenue.

Williams Pedestrian Bridge—City of Springfield, MO—Great River designed the Williams Pedestrian Bridge over Kearney Avenue in Springfield, Missouri. This project was an emergency replacement that was completed within an extremely short timeframe. This project was designed to ADA standards. Currently the project is in the construction phase.



Again, these are just a few of the many bridge projects that Great River Associates has completed and are working on throughout the region. These few help to demonstrate how we can work within a project budget, deliver the desired results and meet the required timeframes. We have also performed and are currently performing bridge rehabilitations for the Greene County Highway Department, which include many of the aspects of your project. Great River Associates works hard to be the local area bridge leader. We have a highly talented, experienced and devoted staff that is excited at the opportunity to work with the City of Branson on this project.

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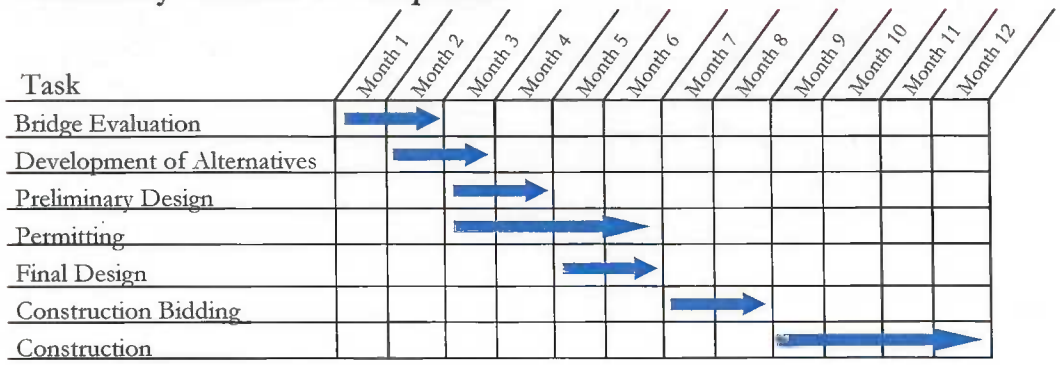
History of Completing Similar Projects

Great River Associates takes pride in our ability to historically meet both the clients needs and budget. Great River strives to find cost effective solutions to engineering challenges to help our clients save money. We understand current economic conditions do not allow for waste, we research alternatives and work with the client to find the best use of their funds. Below you will see just a few of our recent projects that we were able to complete below the client budgeted amounts.

Bridge	Budget	Low Bid	Amount Below Budget
Polk County Road 150 Bridge	$ 1,275,000	$ 1,058,761	*17%*
Williams Pedestrian Bridge (Springfield, MO)	$ 1,250,000	$ 1,000,000	*20%*
Lawrence County Honey Creek Bridge	$ 456,350	$ 428,946	*6%*
Hickory County Starks Creek Bridge	$ 413,901	$ 399,910	*3%*
Polk County Bridge No. 30000161	$ 214,244	$ 189,534	*12%*
Lawrence County Bridge No. 51700141	$ 337,224	$ 270,425	*20%*
Seymour Special Road District Bridge	$ 181,988	$ 125,000	*31%*
		Average Amount Below Budget	***15.5%***

Preliminary Schedule of Completion



Above you can see our preliminary schedule of completion. Many smaller individual task are required to complete this project, the above schedule shows a simplified schedule displaying milestone task. If selected, Great River will provide a detailed schedule to the City of Branson for this project including individual task. The detailed schedule will allow for the City to plan out meetings well in advance as long as press releases and other important items.

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Project Approach

Great River Associates has reviewed the supplied information along and have made site visits to the bridge. Our visual inspection shows much of the roadway portion of the bridge to be in good overall condition. Small areas of delimitation and other problems with the current concrete should be easily repaired with the use of a high strength repair epoxy. In addition to small repair areas, the existing expansion joints should be repaired or replaced at this time to ensure the bridge is in like new condition when this project is completed. Below the bridge the girders will need some patching to repair any worn areas. To repair the substructure we will use similar patching methods for small repair areas and concrete wrapping for larger repair areas. The underwater inspection report shows signs of concrete wear under the water line. In the areas of concern we will recommend wrapping the columns under the water line with a new concrete encasing. This will lock in the existing structure concrete and stop future deterioration.

The additional requirements of design will be addressed one by one during the design process to ensure that each item is fully addressed and a best use of city funds solution is used. The first requirement is an analysis of the existing structure to ensure that all the added load can be safely supported without causing a bridge load posting. For this Great River will use one of our computer modeling platforms and prepare an in-depth computer model of the bridge to ensure that the solution does not cause load restrictions. Great River's talent group of structural engineers and designers have worked on many in-place structures to evaluate the load capacity and address rehabilitation. Great River has completed evaluations on the Ozark Mill Bridge near the city park in Ozark, Missouri and are currently completing a rehabilitation project on the Devils Elbow Historic Bridge in Pulaski County Missouri. In addition, Great River has completed evaluations of many concrete structures of similar design to the Veteran's Boulevard Bridge. Removal of the existing water line will require coordination between the city Utility Department, our regulatory specialist Mr. Steve Brown and the contractor. Removal of this water line will save some dead load and hopefully help to allow the desired improvements to be made.

Great River Associates has multiple traffic engineers on staff to help with the traffic management plan for the bridge closure. The current average daily traffic is large on the Veterans Memorial Bridge the traffic management plan is vitally important to ensure that commuters of the area safely reach their destination. A multiple signage plan will be required for this project.

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Trekking Success 360

Project Approach (Continued)

Starting from South to North, we will employ signage to divert the majority of the traffic from Main Street, East toward Branson Landing Boulevard, through the stop light and then North to the roundabout. However, it is important not to ignore the business community that lie between Main Street and the bridge itself. The roadway must be kept open for this area, with signs alerting drivers to detour to Atlantic or Oklahoma collecting onto Commercial and utilizing the stoplight at Commercial and Branson Landing Boulevard. On the Northern side of the project, signage will be need to be placed at the round about to limit traffic from the bridge area. Special consideration will need to be taken to ensure that the hotel and boat docks are minimally effected.

For the work under the bridge structure the contractor will be required to access all areas of the bridge structure. Our Regulatory Specialist, Mr. Steve Brown, will handle the aspects of the contractors access on this project. Mr. Brown is a Certified Floodplain Manager, has had extensive Hec-Ras water modeling experience, and has worked closely with the Army Corps of Engineers on many bridge projects. This project will require coordination with the Army Corps of Engineers along with Missouri of Conservation, Department of Natural Resources and local landowners. Each of the required entities and local stakeholders will be contacted, with care taken to craft construction drawings and contract documents to satisfy all parties, maintain an acceptable project budget and help to complete the project in a timely manner all while making sure to "limit" the contractor but not dictate means and methods.

The Branson Landing Boulevard Bridge has a great look that works to complement the overall experience of the Branson Landing. From the Branson Landing Boulevard Bridge motorist can clearly see the Veteran's Boulevard Bridge. In addition the Veteran's Boulevard Bridge is a direct travel way to the Historic Downtown District. It is important to complete this project and maintain a uniform visual experience. Branson has worked hard to revitalize this area and has created a flagship destination. This structure is one of the final large pieces of the puzzle needed to complete the experience for citizens and visitors. By utilizing cost effective solutions we feel that we can perform the needed repairs, while making the aesthetic improvements desired while making best use of funds.

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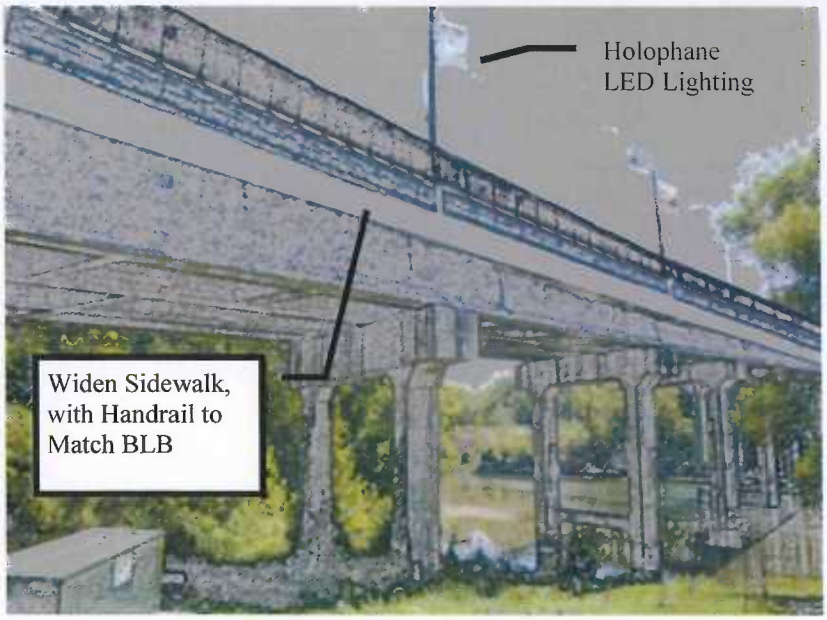
Project Approach (Continued)

Great River has performed some conceptual design on the bridge project. These conceptual designs help to give an experience of what the completed bridge will look like.

The addition of a widened sidewalk will work to not only meet ADA requirements but will also help to make the sidewalk more inviting for pedestrians to use. The current narrow sidewalk has an unsafe feel for pedestrians. The stamped concrete crash railings along with steel hand rails and Holophane LED lights will create a positive and inviting visual impact for the bridge and the downtown area. Removal of the water line will also aid in improving the overall visual appeal of the structure.



The photo above shows the bridge before any rehabilitation, while the sketches to the left and below shows what the visual impact of the rehabilitated bridge can be. This is a great canvas for the City of Branson to take from a standard bridge structure to the high level precedent that the City of Branson has set with the completion of the Branson Landing and the Branson Landing Boulevard Bridge. All while maintaining an acceptable level of cost.

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Trekking Success Daily

Project Approach (Continued)

Great River Associates has completed well over 100 bridge projects throughout the area. While working on these projects we have learned how to properly work with environmental regulation agencies on sensitive issues such as wetlands and work with private entities like the railroad. Mr. Steve Brown will handle wetland concerns and coordination with the railroad. If any wetland remediation is required our staff of local civil engineers and landscape architects can address the challenge and complete the requirements set forth. Respecting and working with the environment is important to Great River, this can be shown by the design of our parking expansion at the Branson Landing that is yet to be constructed. In addition to handling wetland impacts Mr. Brown will work with the MNA and Union Pacific railroads to ensure that all requirements are met. Many of our employees have passed railroad safety training and are experienced in working with railway flagmen and regulations. Our most recent experience with railroads was a recent visual inspection on the Jefferson Avenue Pedestrian Bridge in Springfield, Missouri. This bridge spans over multiple rail lines near downtown Springfield.

Mr. Brian Viele will handle the establishment of existing Right-of-Way and provide both permanent and temporary easements as they are needed for the project. Great River Associates will provide all required documents for the Right-of-Way process. Mr. Viele will also coordinate with the local utility companies to clearly map out the existing utilities near the project. In addition Great River will provide construction staking services if required.

Great River has completed multiple ADA compliant sidewalk and pedestrian bridge projects. Ms. Jerany Jackson will be Great River Associates ADA compliance supervisor. Ms. Jackson has extensive knowledge of ADA regulations and has successfully worked on many pedestrian projects. The new sidewalk and approaches when complete will be ADA compliant and allow all citizens not just some to enjoy the great city of Branson, Missouri.

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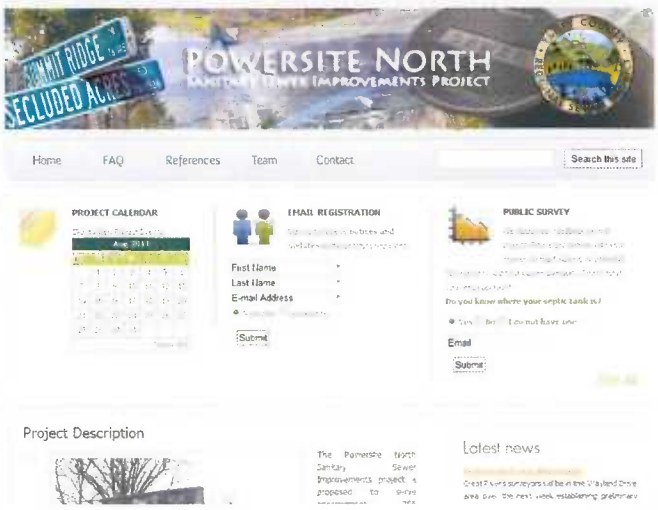
Public Interaction

Great River Associates does not just offer basic engineering services, we also work hard to engage both our clients and the public to help complete successful projects with the support of both the client and the public. For this project we recommend a multiple facet approach. The first facet of the approach is to launch a project website. The project website will allow people to sign up for email alerts, review the status of the project, see upcoming important dates and give their feedback to the city and project team. These project websites are just a part of the public interaction strategy.



In addition to project websites, we also handle Open House Meetings that help to engage both the web and non-web using public. For this project we recommend at least two of these meetings. The first meeting will be at the kickoff of the project. During this meeting we will ask attendees for their input on look of the bridge, routing of local traffic around project, general input and listen to their concerns. This meeting will help to engage the public from the start of the project which will aid in obtaining the important public support. The second meeting will be after design but before construction begins, this meeting will be to answer concerns and questions by the public so they have a strong understanding of closure time, re-routing routes and any other questions they may have.

Great River has held public meetings of this type for projects with Greene County, City of Aurora, City of Springfield and Christian County. These meetings have helped to gain and keep public support on projects. If we engage the public from the start and attempt to address all concerns then citizens tend to be supportive of the final product. Also projects in which we perform the hands on Public Interaction tend to go smoother and more support from local media.

Great River also will produce press releases for the city to review and distribute to local news organizations in order to alert the project to upcoming items of interest. This may include the closing of the bridge, award of the contract, public meetings upcoming. Anything that the public should be made aware to help gain public support for the projects.

References

We feel that our best advertisement comes from our existing bridge clients. Please take a minute to call one of them listed and ask their opinion.

Denzil Roberts
Polk County
Presiding Commissioner
417.326.4031

Kenneth Bacon
Dallas County
Associate Commissioner
417.751.2151

Dan Smith
Greene County Highway Department
Highway Administrator
417.829.6505

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GREAT RIVER ASSOCIATES

Closing

Since our inception, Great River has worked hard to establish a strong working relationship with the City of Branson. Over the years Great River has completed one project, the Rainbow Shoals Sewer Project with the City of Branson. Great River has also worked hard to establish ourselves as the Bridge Design leader in Southwest Missouri. Therefore, we feel that this project is a great fit for our company as our next step in building a working relationship with the city. Great River is committed to providing the highest level of service to the City of Branson. This is not a statement taken lightly or a statement made by only one manager. It is a commitment from the entire company. By signing this sheet the entire Great River Associates Team is pledging to strive to not just fulfill the requirements of the project but to provide the highest level of service available to the City of Branson.

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August 22, 2011

CITY OF BRANSON
ENGINEERING/PUBLIC
WORKS DEPARTMENT
Attn: Mr. Keith Francis, P.E.
Assistant Director of Public Works
110 Maddux Street, Suite 310
Branson, Missouri 65102

RE: Veteran's Boulevard Bridge Repairs and Improvements
Letter of Interest and Statement of Qualifications Information
CDG Engineers Qualifications No. Q11105-05

Gentlemen:

The following applies to this abbreviated *Expression of Interest* response letter:

- Various members of the technical staff of CDG Engineers Architects Planners, Inc. (CDG Engineers) have performed engineering and design services for several similar bridge deck and sidewalk rehabilitation projects, including projects in various corners of the State of Missouri;
- The dominant disciplines at CDG Engineers are civil and structural engineering, with 12 members of the 65-person technical staff being structural engineers and five of those being bridge engineers (Glenn Smith, P.E., Djamel Benbakir, P.E., Timothy Nugent, P.E., Nathan Barger, P.E. and Richard Marcinkiewicz, P.E.).
- Public Works and Infrastructure Staff Members have specialized in the performance of engineering and design services work for local public agencies (municipalities and county agencies) throughout their entire careers.
- The firm has been seeking consideration for City of Branson Engineering Work for the past several years, and this project represents a reasonably sized project for a first assignment.

Proposed Veteran's Boulevard Bridge Repairs and Improvements Project Team:

If CDG Engineers was selected for this upcoming project, **Glenn A. Smith, P.E**. would serve as CDG's Project Manager and your primary Point-of-Contact. In this role, Glenn would be responsible for managing all aspects of this bridge rehabilitation project. He has 30+ years of bridge design experience in Missouri and has designed or led design work on numerous bridge projects throughout the state, including MoDOT bridge projects on I-44, I-270, I-70 and other major routes. Glenn is a bridge engineer with specialized expertise in river and stream crossing bridge experience. Glenn has worked almost exclusively on transportation improvement projects throughout his career, including projects for the MoDOT Bridge Office.

Other transportation clients have included the City of St. Louis Board of Public Service, the Illinois Department of Transportation and various county highway or public works departments (Cole, Franklin, Gasconade, Jefferson, St. Charles and St. Louis). Franklin County projects have included the rehabilitation of more than 20 separate bridges to increase their useable life, load capacity and safety. Glenn has completed bridge design plans for numerous municipalities in the St. Louis Metropolitan Area, as well as in Outstate Missouri. Glenn is also a state officer for APWA in Missouri. Glenn has directed replacement and rehabilitation design work and plan preparation for over 100 bridges, and other structures (culverts, retaining walls, interchanges structures, etc.).

Glenn recently directed the engineering and design work for re-decking (rehabilitation) of four MoDOT bridges.

Tim Nugent, P.E. would assist Glenn and be the Lead Bridge Engineer/Assistant Project Manager. Tim has 15+ years of bridge design experience including work for the MoDOT Bridge Office: Route 94 over I-70, 6th Street on-ramp to I-64, 2 Route Z bridges over Dardenne Creek, Route D over Cuivre River, US 69 over Williams Creek and Route 72 over Love Branch. Tim is a bridge engineering and design services specialist and he has completed engineering designs and plans for a variety of bridge structures and MSE wall installations for surface transportation projects located throughout the State of Missouri.

Tim has performed engineering design for bridge projects for both the Missouri and Illinois Departments of Transportation, the St. Louis County Department of Highways and Traffic, the City of St. Louis Board of Public Service and several St. Louis Metropolitan Area municipalities. He has also performed bridge evaluation and design work for several county agencies (Franklin, St. Charles, St. Louis and Jefferson Counties, and the City of St. Louis), located in Eastern Missouri. Tim has performed bridge work his entire career.

Tim also served as the design engineer for the re-decking (rehabilitation) of four MoDOT bridges (two in Boone County and two in Andrew County). This project work was performed for the Bridge Division of MoDOT.

Djamel A. Benbakir, P.E. (20+ Years) – Djamel has more than 22 years of project experience. Early in his career, Djamel performed structural engineering inspections and report preparation work for BEAP contracts in past MoDOT assignments for bridges in Eastern Missouri. Additionally, his experience has included engineering analysis and design work for bridges and culvert structures at sites throughout the St. Louis Metropolitan Area. He also has expertise in seismic analysis and design, as well as construction site inspection, progress reporting and preparation of construction phasing plans.

In performing bridge engineering work for the Franklin County Highway Department, he worked on more than 25 bridge evaluation and replacement projects. His other bridge work has included past projects for MoDOT's Bridge Office (BEAP inspections, interchange structures design, bridge design, etc.) and bridge engineering for such local groups as the Missouri communities of Arnold, Ballwin, Brentwood, Florissant, O'Fallon, St. Louis City and County, Wentzville and Wildwood.

Djamel has worked with Glenn Smith and other CDG Engineers technical staff members since 1990.

Nathan Barger, P.E., LEED will assist Glenn and Tim as a Bridge Engineer. Nathan has 10+ years of bridge design experience including the following MoDOT bridge projects: Route K over Blackwater Creek, Route F over Salt River Fork, Route M over Falls Branch Creek and Route 38 over Bowman Creek. Nathan is a structural (bridge) engineer with over 12 years of experience in design of bridges, culverts and other structures. Nathan completed preliminary and final design for numerous bridges (new bridges and replacements) for MoDOT.

Nathan has also performed design work for the following bridge projects: Paul Ave. over Maline Creek in Ferguson, Missouri; 7th Street over Koen Creek in Park Hills, Missouri; Andersohn Drive over Grand Glaize Creek in Manchester, Missouri; Long Road Interchange at Highway 40/61/64 in Chesterfield, Missouri; Delmar Boulevard over the MetroLink Railroad Tracks in St. Louis, MO and Sports Park Bridge in O'Fallon, Missouri.

In addition, CDG structural staff members, **Jim Newcomer, P.E., S.E., Dave Wiebke, P.E., Sarah Bruehl, E.I.T, Miranda DuClos, E.I.T. and Amy Gao** will also be available to assist with bridge design and plan preparation.

Team Project Experience:

CDG Engineers is experienced in bridge design and MoDOT-compliant plan preparation. Examples of recently completed, current or past bridge projects include:

CDG completed the rehabilitation design of Bridge R00231 on Route NN over Perche Creek in Boone County (60-75-60) and construction was completed in 2010.

- MoDOT Bridge Division and District 5 project in Boone County (Bridges R00231 and L02001) – Two stream crossing bridge rehabilitations under the "Safe and Sound" Bridge Rehabilitation and Replacement Program. Plans were completed more than two weeks ahead of schedule in August 2009. See project page.
- MoDOT Bridge Division and District 1 project in Andrew County (Bridges A07262 and A07263) – Two bridge rehabilitations over I-29 under "Safe and Sound." Plans were completed in October 2009 ahead of schedule.

In addition to the above, in the last five years CDG has performed bridge design for many clients including:

- Division of Parks of the Missouri Department of Natural Resources
- Franklin County Highway Department
- Jefferson County Public Works Department
- City of Chesterfield Public Works Department
- City of Crestwood Public Works Department
- City of Des Peres Public Works Department,
- City of Fenton Public Works Department
- City of Maryland Heights Public Works Department
- City of Wildwood Public Works Department

Proposed Sub-consultant and Local Knowledge: The Missouri-based firm of Palmerton & Parish has agreed to support CDG Engineers in this upcoming project assignment. Their role will be to provide site data collection during the design phases and to perform quality control inspections and materials testing during construction and any investigation testing that may be required during design. The Branson Office of P&P will be used by the proposed project team as a base of operations during the conduct of this project to repair and rehabilitate the Veteran's Boulevard Bridge over Roark Creek and the MNA Railroad.

CDG Engineers has the necessary skill sets, experience and capacity to perform the engineering and design work for sidewalk, guardrail and fencing replacements for the Veteran's Boulevard Bridge. We would welcome the opportunity to demonstrate our experience, capability, understanding and enthusiasm in a meaningful face-to-face project discussion with the City of Branson and its Public Works Department engineering staff.

Respectfully submitted,

CDG Engineers Architects Planners, Inc.

Glenn A. Smith, P.E.
Proposed Project Manager
smithg@cdgengineers.com

Michael A. Augustine
Director of Project Development
augustine@cdgengineers.com

Attachments: Project Understanding, Proposed Schedule and Other Qualifications Information

City of Branson

Engineering Services for the Veteran's Boulevard Bridge Repairs
Project Understanding & Proposed Schedule by Glenn A. Smith, P.E.

Project Understanding:

~ CDG Engineers will carefully review the existing bridge drawings, BEAP report, Underwater Inspection Report and the latest MoDOT inspection report. Existing drawings can be scanned and digitized to create an AutoCAD version of the needed drawings.

~ Throughout the proposed project, CDG Engineers will carefully monitor and update the construction cost estimate of the proposed improvements to insure that these bridge improvements can be accomplished within the City's budget and keep the City's staff updated on the latest construction cost estimate.

~ CDG will analyze the existing structure, especially the deck and girder superstructure to determine the actual load carrying capacity of the existing bridge assuming no deterioration using the latest AASHTO LRFD standards. The CDG Engineers team will then incorporate existing observed deterioration into that engineering analysis to determine the current structural capacity.

~ Review sealant products to be used to seal the bridge deck below the sidewalk. Prior to sealing, will need to thoroughly clean the bridge deck and probably use a penetrating sealer. To be effective, the deck sealer should be re-applied every 2-3 years. MoDOT performed bridge deck sealer tests and published a reference report (#0R07-009 in March 2007 by David D. Wenzlick, P.E., which contains good unbiased sealant bridge deck testing information).

~ Conduct a field review of the existing bridge to supplement the BEAP report and accurately measure and locate the existing deterioration on the concrete girders, deck and end/intermediate bents. PPI Branson staff will be utilized under the direction of CDG to reduce cost.

~ Confirm the current City Utility Department procedures so the existing water line on the bridge can be removed and capped at both ends of the bridge. This will reduce the dead load and provide additional load carrying capacity for the bridge.

~ Review alternatives to remove and replace the existing sidewalk along the "west" (upstream) side of the existing bridge. Add aesthetic elements including railing and lighting along the new sidewalk to match the elements on the Branson Landing Bridge (BLB). One alternative could be to build a free-standing ped/bike bridge alongside the Veteran's bridge. This would further reduce the dead and live load on the bridge and could provide a wider (8' to 15') and nicer bike/pedestrian crossing of Roark Creek and the MNA/UP RR tracks. Due to the new substructure costs, this may be too costly, but longer (200'+/-) spans could be reviewed to reduce the substructure cost.

CDG is currently designing a new similar 7 span, 12' wide 772' long free-standing Railroad Overpass Bridge for the Missouri Department of Natural Resources (MoDNR) on the new 47 mile long Rock Island Trail to be constructed near Pleasant Hill, MO over the Union Pacific Railroad tracks.

~ All new fencing/ railing over the MNA/UP RR tracks will need to meet Union Pacific Railroad guidelines, which is a minimum 10' high for a straight fence and minimum 8' high for a curved top fence along a sidewalk.

~ Review maintenance of traffic options and associated construction costs and durations. The City would prefer to keep the bridge open to at least one lane in each direction. The Roark Vacation Resort is located off the north end of the bridge and the Crescent Court Motel and Taney Motel are located off the south end. Those businesses would be negatively affected by a total bridge closure. CDG Engineers can estimate the construction cost and additional time required if the bridge will remain open during construction versus a total closure. Some night time work could also be utilized to limit closures. Tourism traffic during weekends is probably worse. Contractor incentives/penalties can be included in the project specifications to insure the contractor meets the City's desired traffic and closure requirements.

~ A detailed signed detour plan for each stage will be prepared and will include signs through the five legged "Skaggs Roundabout" off the north end of the BLB structure.

~ To construct the rehabilitation work, the contractor may need to construct a causeway or pad into Roark Creek, which may require a Corps of Engineers (C.O.E.) permit. This work should be covered under a Nationwide permit under item number 14, Linear Transportation Projects (72 FR 11183). CDG routinely applies for transportation project C.O.E. permits all over the Midwest and knows the procedures and Corps personnel well that would review and approve such a permit. C.O.E. approval should also coincide with a 401 Clean Water permit from MoDNR.

~ The new sidewalk and barrier curbs can easily incorporate the desired aesthetic elements used on the BLB structure along with decorative street lights. CDG has recently worked with Halophane on several recent projects and agrees that LED lamps can now be incorporated into the light standard style used on the BLB bridge.

~ A wetland review can be accomplished by CDG Engineers, but we do not believe any additional remediation will be required on this project. CDG would suggest that the Project Scope include a wetland review, but any remediation required could be as additional work since it is probably not needed.

~ We understand that the MNA uses the Union Pacific Railroad tracks run along the south side of Roark Creek under the south end of the bridge. At his previous employer, Glenn Smith worked closely with MNA on the new street crossing of BLB with Long and Main streets, including the directional horn system. CDG also knows and understands the UPRR

requirements, permits and flagger criteria. That will need to be closely coordinated with MNA and UPRR so the project specifications clearly describe what the contractor needs to include in their bid.

~ Existing Right of Way and easements will be closely investigated for their adequacy for the proposed construction work. We agree that the area between the bridge and the Skaggs Roundabout might be good for a contactor staging and laydown area, but that will also be impacted by the traffic and detour plan established.

~ CDG will provide the R/W documents needed if additional easements or new R/W is required for construction, to be negotiated and obtained by the City. CDG has reviewed the existing R/W and property information provided by the City and believes some new Temporary Construction Easements (TCE) may be needed but probably no new R/W.

~ Provide the technical specifications to supplement the MoDOT standard specification and the City's front-end contract documents for the proposed Bridge Repair and Rehabilitation work.

Proposed Project Schedule:

~ September 2011	City of Branson and CDG Engineers execute a Design Contract
~ October 3, 2011	Notice to Proceed with Engineering Design
~ October-November, 2011	Site inspections and Preliminary Rehabilitation Design
~ November 30, 2011	30% Preliminary Des. Review Meeting with City to confirm project goals
~ December 7, 2011	City approves Preliminary Plans including Traffic Control and R/W
~ December-February, 2012	City acquires new R/W and easements, if required.
~ January 18, 2012	90% Completion, Pre-Final Plan Review Meeting with City
~ January 25, 2012	City of Branson approves Pre-Final 90% Plans
~ January - February, 2012	MNA, UPRR and COE permits are obtained
~ February 24, 2012	100% Sealed and Signed Drawings and Specification delivered to City
~ March, 2012	Project advertised and construction bids received
~ April 16, 2012	Contractor receives Notice-to-Proceed (NTP) from City
~ April-August, 2012	Rehabilitation Construction on Bridge
~ September, 2012	Project Completion

NOTE: Additional on-going reviews and submittals can occur with the City, but that could slow down design progress and delay the project construction bid advertisement.

City of Branson

Photographs for Engineering Services for the Veteran's Boulevard Bridge Repairs

Looking north along BLB bridge. East sidewalk with new ornamental pedestrian railing and lights to be used on Veteran's Bridge with LED lamps.

Looking north along west side of BLB Bridge. Note concrete form linear pattern used on outside of concrete barriers.

Looking south along west sidewalk of Veteran's Bridge. Sidewalk to be removed and replaced.

Looking south along west elevation of Veteran's Bridge. Note existing water line to be removed and capped.

Looking south along existing sidewalk between spans 3&4. Note horizontal (westward) 1 1/2 "displacement of deck along expansion joint.

Looking up from Roark Creek at typical intermediate bent concrete deterioration.

Missouri Department of Transportation - Bridge Division

Andrew County and Boone County Bridge Redecking Projects

Andrew and Boone County, Missouri

CDG Engineers performed this final engineering and design work as part of the "Safe and Sound" Bridge Improvement Program

CDG Engineers was hired by the Missouri Department of Transportation (MoDOT) and its Bridge Division Office to perform final engineering and design services for the re-decking and associated re-construction of four (4) highway bridge structures.

Two of the bridge structures were located in Andrew County, Missouri and the other two were located in Boone County, Missouri. This work was performed as part of the "Safe and Sound" bridge improvement program administered by the MoDOT Bridge Division office in Jefferson City, Missouri.

Andrew County Bridges A07262 and A07263:

Two bridge redecks over I-29. Rehabilitation and re-decking of dual existing 4-span continuous non-composite steel I-beam bridges. Made existing beams composite in positive moment regions. Removed existing deck expansion joints and replaced with integral end bent at End Bent No. 1 and semi-integral end bent with sliding concrete diaphragm at End Bent No. 5.

Boone County Bridge R00231:

Rehabilitation and re-decking of the existing 3-span composite steel I-beam bridge. Added shear studs and bracing to negative moment regions and added bottom flange cover plates in positive moment regions. Removed existing deck expansion joints and replaced with integral end bent at End Bent No. 1 and sliding slab over backwall at End Bent No. 4

Boone County Bridge L02001:

Rehabilitation and re-decking of existing 3-span non-composite steel I-beam bridge. Made existing beams composite in positive and negative moment regions. Removed existing deck expansion joints and replaced with sliding slab over back wall at End Bent Nos. 1 and 4.

Timely Project Completion

The final design work was completed under an accelerated design schedule in Late 2009, and re-construction work for all four of the bridge structures was finished in 2010.

CDG ENGINEERS

Missouri Department of Natural Resources (MoDNR) Division of State Parks and Ameren Missouri

Rock Island Pedestrian Trail (47-mile Extension)

This engineering and design services project encompassed 88 total structures, including 10 new pedestrian/bikeway bridges and dozens of culvert structures to accommodate the new trail use.

Project Location:
For the past several years, CDG Engineers has been working with Ameren Services and the State of Missouri for the design and construction of a 47-mile Pedestrian and Bikeway Trail to be located in Western Missouri. This off road pedestrian and bike trail was determined to be located between Windsor and Pleasant Hill, Missouri along inactive railroad tracks contained within the Missouri Central Railroad right-of-way corridor.

Initial Study:
Previously, the parent corporation of Ameren had purchased this inactive railroad line for its possible use as a transportation route for unit train fuel deliveries to the Labadie Power Plant. Another option was for it to be used as a potential transmission line route. Ameren selected CDG for a study to collect relevant site information and prepare conceptual designs and construction cost estimates for the this proposed trail project. This study, which included the evaluation of several horizontal and vertical alternatives for the new trail, was performed for the Ameren Fuels Group and Real Estate Department.

Preliminary Engineering/Alternatives Analysis:
CDG Engineers was later hired by the State of Missouri and its Department of Natural Resources (Division of Parks) to prepare conceptual, preliminary and other design documents for the "Western Extension" of the Katy Trail. This segment of trail was later named the "Rock Island Trail." After further reviews of construction alternatives, a "preferred alternative" was selected for the proposed construction of a new 12 foot wide two-way gravel surfaced trail alongside the existing rail line and within the existing right-of-way for the Central Missouri Railroad.

Bridge/Culvert Structures:
The trail project includes the performance of extensive engineering and design services for 10 bridges, 33 existing large culverts (over 6 feet) and an additional 45 existing culvert crossings (under 6 feet).

Final Plans:
CDG Engineers was authorized to develop final plans and other related technical documentation. This work was also performed for the Division of Parks of the Missouri Department of Natural Resources. The contracting agent was the Missouri Division of Facilities Management, Design and Construction. The CDG Team for this design activity also included M/WBE firms and sub-consultant organizations with specialized expertise.

CDG ENGINEERS

CDG Engineers Architects Planners, Inc.

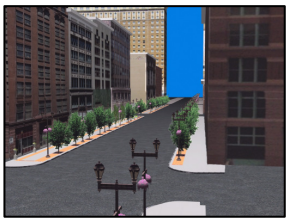
Public Works and Infrastructure Services Overview

St. Louis, Missouri

CDG Engineers Architects Planners, Inc. is a full service, multi-discipline professional services organization with more than 70 personnel. Technical services have included various engineering studies, design and construction coordination assignments. Specialized experience and technical expertise for the following:

- Pedestrian and Bikeway Trails and Walkways
  - Recreational Park and Recreational Site Improvements and Amenities
  - Hiking and Biking Trails (locations studies, alternative alignments, design, etc.)
- Street and Streetscape Improvements and Other Transportation Enhancements
  - Site Planning
  - New Sidewalks
  - Curbs and Gutters
  - Street Lighting
  - Landscaping
- Creek/Channel/Stream Restoration, including Erosion Control
- Flood Plain Protection Studies, including hydrological and hydraulic modeling
- Permitting Assistance, Permit Applications and Compliance
  - Flood Plain Development, Army Corps of Engineers, State Department of Natural Resources (or Environmental Protection Agency) and Water Quality Permits
- Roads/Bridges/Culverts/Retaining Wall Structures
  - Plans, Specifications, Construction Estimates, Construction Administration
- T.I.P. Project Administration and Execution
  - Preparing Applications for Local Public Agency (LPA) funding assistance
  - Managing T.I.P. funded projects and complying with all technical requirements
- City Engineer Services
  - Performance of on-call task order assignments
  - Indefinite Delivery/Indefinite Quantity (IDIQ) contracts
- Area-wide Exterior, Security and Pedestrian Lighting
- Parking Structures (New Construction and Repair/Restoration)
  - Studies, Inspections, Design and Construction Administration
- Sanitary Sewers and Storm Water Drainage and Control Systems
  - Sanitary Relief Sewers
  - Combined Sewer Relief Projects
  - Channel Restoration and Stream Bank Stabilization
  - Sewer Rehabilitation and/or Replacement
  - Pump Stations and Outfalls
- Administrative, Maintenance and Support Buildings Programming and Design, as well as Site Planning and Other Project and Construction Administration Services

CDG Engineers and its full-time 70-person technical staff routinely provide multi-discipline expertise for various municipalities and governmental entities.



CDG ENGINEERS

Veteran's Blvd. Bridge Repairs

Presented to:
City of Branson, Missouri

Presented by:
Shafer, Kline & Warren, Inc.

August 23, 2011

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SHAFER, KLINE & WARREN, INC.

August 23, 2011

Mr. Keith Francis, P.E.
Assistant Director of Public Works
City of Branson
110 W. Maddux, Suite 310
Branson, Missouri 65616

Re: Veteran's Boulevard Bridge Repairs

Dear Keith,

SKW is excited to submit our proposal to the City of Branson for the Veteran's Boulevard Bridge Repairs. Our experience working with you and your staff on the study of this bridge has increased our enthusiasm for continuing onto the next phase of this project. We are glad we were able to assist the City in acquiring Bridge Engineering Assistance Program (BEAP) funds from MoDOT for the bridge study. Without performing this study, the City would have limited knowledge of the scope of repairs needed to maintain this bridge well into the future.

Our team is the best qualified firm because:

- **Experience:** The SKW team has an extensive history with bridge design projects, along with a broad spectrum of engineering disciplines and experience. We are confident in our ability to perform exemplary services for whatever situations may arise throughout the project.
- **Personnel:** Our key personnel have many years of experience and specialize in bridge projects. Gary Strack, P.E., who will be serving as the Project Manager, has more than 25 years of bridge design and maintenance experience and has managed and designed hundreds of bridge projects.
- **Familiarity:** The SKW team is familiar with this project and the City of Branson. We know your key staff and are familiar with your preferences saving you time and money getting another consultant up to speed.
- **Communication:** SKW maintains cutting edge technology including video conferencing to make access to our staff as simple as possible. Gary is available by cell phone (816-582-9538) for your convenience. We routinely travel across the state and will do so for any meetings on-site or in the City offices as needed.

SKW is excited about the opportunity to continue working on this project with you. If you have any questions, or would like to request additional information, please do not hesitate to contact us toll-free at 800-280-8901.

Sincerely,
Shafer, Kline & Warren, Inc.

Gary D. Strack, P.E., SECB
Associate, Project Manager

Jerry Johnson, P.E., LEED AP
Principal-in-Charge

SHAFER, KLINE & WARREN, INC.

SKW is a regional professional engineering firm. Founded in 1950, SKW has over 60 years of experience and a staff of more than 250 employees throughout nine offices. We have a reputation for providing personal service and delivering quality projects on time and within budget. We listen to your requests and seek your input when determining what is individually important to you. SKW offers a wide range of service capabilities, including:

- Civil Engineering
- Structural Engineering
- Mechanical Engineering
- Electrical Engineering
- Land Planning
- Land Surveying
- Landscape Architecture
- Construction Observation
- Geographic Information Systems (GIS)
- Public Participation
- Energy Services
- Pipeline Integrity
- Pipeline Survey
- Instrumentation and Controls

SKW's design teams have experience designing and repairing over 400 bridges including truss, suspension, concrete and steel beam, prestressed, concrete, metal arch and concrete arch structure types. We are active members of several regional organizations allowing us to represent the unique challenges of design and construction faced by communities with limited resources. This includes advocating practical design initiatives for local agencies and participating in a task force to address practical design for bridges. This diverse level of understanding has allowed us to successfully build dozens of long-term client relationships and become a recognized leader in the area of bridge design.

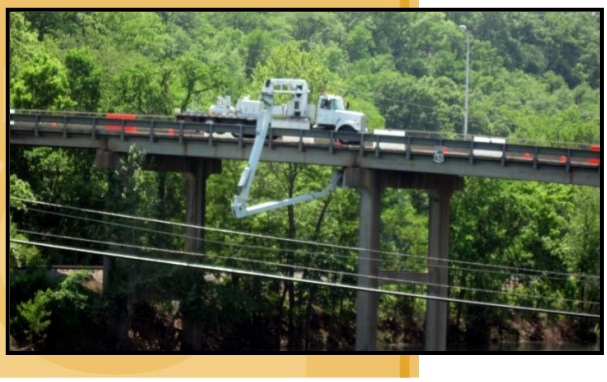
RELATED EXPERIENCE

SKW is proud that a high percentage of our clients are repeat clients. This is based on their experience with our staff and the quality of our work. We often have construction projects with less than 1% change order amounts. SKW can offer documented evidence of excellent customer service and proven project results on recent MoDOT bridge projects. The post-construction reviews of our performance (Ron Effland, P.E.) on three bridge replacement projects for District 8 in Greene, Laclede, and Polk counties all included extremely positive comments regarding our responsiveness and overall design performance. This is further evidenced by a very low number and scope (less than 1% of construction) of necessary change orders during construction.

Veterans Boulevard Bridge Evaluation - Branson, MO

Client Information
Missouri Dept. of Transportation
Mr. Gene Houchins
573-526-5167

SKW performed a unique bridge inspection which included: chain dragging of the bridge deck for concrete delaminations, sounding of concrete structural components for deteriorated areas, and using a snooper truck to evaluate the underside of the bridge in Branson on Business 65 over Roark Creek and the MNA Railroad. The snooper truck allowed SKW Engineers to observe and sound areas of deterioration up close on the underside of the deck, sidewalk, girders, and intermediate bents.



The areas of deterioration were quantified and an opinion of construction cost was developed. A summary report was provided to describe the deterioration, costs, and recommendation on repair timeframe. SKW assisted the City of Branson in obtaining funding through the Bridge Engineering Assistance Program (BEAP) provided by MoDOT to pay for the entire study at no cost to the City.

MoDOT Bridge Engineering Assistance Program (BEAP)

Client Information
Missouri Dept. of Transportation
Mr. James Laughlin

573-526-5167

The Missouri Department of Transportation's (MoDOT) Bridge Engineering Assistance Program (BEAP) is a program whereby local governments can receive MoDOT funded engineering assistance for existing bridges where definite problems are present usually within a budget of $2,500. These problems may include increasing the posting of a bridge so a school bus can cross, resolving scour issues, which are endangering a bridge, sizing the hydraulic opening of a new bridge, sizing beams and designing a deck for a new bridge, sizing large culverts to replace small bridges, etc.

SKW has been providing engineering services for the BEAP program for the past 14 years and our contract extends to 2014. While each bridge project is unique, our engineering services have included inspecting the structure, analyzing conditions and formulating recommendations for the following:

- Repair of damaged members
- Produce plans to strengthen old or weakened bridges or members with load posting restrictions
- Repair emergency flood or vehicular damage
- Improve hydraulic adequacy and repair channels
- Increase load posting limitations
- Conduct cost studies for repair or replacement alternatives
- Develop recommendations on whether or not to close a bridge

Under the BEAP contract, SKW has worked on more than 90 bridge projects in over 40 Missouri counties including: Adair, Benton, Callaway, Carroll, Cass, Chariton, Clark, Dade, Daviess, Grundy, Harrison, Henry, Howard, Jackson, Knox, Lafayette, Lewis, Lincoln, Mercer, Miller, Macon, Marion, Moniteau, Monroe, Morgan, Osage, Pettis, Pike, Platte, Putnam, Ralls, Randolph, Ripley, Saline, Schuyler, Scotland, Shelby, Sullivan, Taney, Texas, Warren and Wright.

Design Redecking for Four District 5 Bridges - MO

Client Information
Missouri Dept of Transportation
Mr. Gregory Sunde
573-522-2560

SKW was retained by the MoDOT Bridge Division to prepare final plans and estimates for four bridge redecking projects in District 5. The location of the bridges are in Callaway County on Route B over Loutre Creek, Cooper County on Route U over Little Clarks Fork Creek, Cooper County on Route U over Clarks Fork Creek, and Moniteau County on Route T over Burris Fork Creek. All four bridges are three-span rolled steel beam spans with new concrete slabs and barrier rails. The new concrete slab bridge roadway widths were widened from the existing 20' to 22'. Load postings were able to be removed from these bridges by making them composite sections with steel studs applied to the existing steel girders which, in addition to the diaphragms and bearings, were cleaned and repainted per MoDOT specifications.

The new slabs consist of a 22' wide roadway with epoxy coated reinforcing steel and standard Jersey Barriers. The Callaway County and Cooper County bridges were designed as 3 simple spans with a continuous concrete slab, eliminating expansion joints on the bridge, thus requiring less maintenance in the future. The Moniteau County bridge was kept as continuous 3 span section. Following the redecking, all four bridges were no longer functionally obsolete or structurally deficient, and did not require load posting when completed in March 2008.

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South Marietta St. Bridge Replacement - Excelsior Springs, MO

Client Information
City of Excelsior Springs, MO
Mr. Chad Birdsong
816-630-0755

SKW was retained by the City to conduct a visual inspection of the South Marietta Street Bridge and to assess the structural condition of the substructure and superstructure. A brief report was prepared and submitted to the City summarizing the bridge inspection and condition. SKW presented four options to rehabilitate or replace the bridge and keep it in service. Included in the report were estimates of probable construction costs for the year 2003:

- Replace the existing bridge superstructure with new girders and deck, $380,000.
- Replace the existing bridge superstructure with new girders, deck and decorative rail, $405,000.
- Replace the entire bridge with a new bridge with a decorative rail, $435,000.
- Rehabilitate the existing bridge to maintain the historic look of the bridge, $515,000.

In 2007, the City moved forward with the project and retained SKW to provide survey and design services. SKW utilized the high definition survey scanner to perform the existing conditions survey of the historic bridge located on South Marietta Street in downtown Excelsior Springs, MO. The purpose of the high definition survey was to model and document the existing structure in AutoCAD for use in the design of replacing the bridge superstructure to be built to look identical to the original construction. The SKW survey department was responsible for providing the as-built survey and preparing the plan and profile drawings. Due to federal STP funding, the project required conformance to the MODOT Local Public Agency (LPA) guidelines. The project was completed in October 2009.

Mission Road Bridge Design over Rock Creek - Fairway, KS

SKW was hired by the City of Fairway, KS, to provide surveying, engineering, landscape architecture, and construction administration and observation services to replace an existing single-span, 39’ steel beam bridge over Rock Creek that was prone to flooding during heavy rains. The project created a three-span, reinforced concrete haunched slab bridge 150' in length, with span lengths of 45’-60'-45', a variable roadway width, and a variable skew located in a horizontal curve. The bridge is designed in accordance with APWA KC Metro standards to pass a 100-year flood event and features stone facade treatments, decorative railings and lights, and landscaping. **SKW's work on the Mission Road Bridge won the 2009 APWA Public Works Project of the Year Award.**

The project included grading and pavement plans for Mission Road, as well as sidewalks, storm sewer and sanitary sewer relocation. In addition, grading and pavement plans were prepared to relocate Shawnee Drive. SKW also provided grading plans within the channel of Rock Creek. The grading involved expansion of the main channel while preserving the bottom 3' of the channel (which is used as a pilot channel). SKW completed the application process for the required 401/404 permits. Erosion control using articulated concrete block

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and/or stream bank stabilization vegetation mix was provided throughout the disturbed channel section. The mix was a combination of native grass and wildflower plugs with overseeding of complimentary species. The roadway was planted with shade trees to provide an overhead canopy for pedestrians utilizing the walks, and to provide traffic calming and visual containment to motorists. Utility relocations included two gas mains belonging to separate companies, water line, power lines, sanitary sewers, storm sewers, telephone and cable television.

In accordance with Kansas Department of Transportation (KDOT) requirements, SKW was also hired by the City to provide resident construction observation services to ensure quality construction. This complex bridge project involved the purchase and demolition of five homes, which were flood prone. Construction was completed in 2008 and areas where homes were demolished are now landscaped. Community input was an ongoing and important component of the project. This project was bid and administered by the Kansas Department of Transportation.

KEY PERSONNEL

SKW is a regional professional consulting firm primarily serving the states of Missouri, Kansas, Oklahoma and Texas. SKW is privately owned with more than 250 employees in nine offices locations throughout the Midwest region.

Services for this project will be performed primarily using staff from our Lenexa office, with additional support from our Columbia office.

11250 Corporate Ave., **Lenexa**, KS 66219, Phone: 913-888-7800
3200 Penn Terrace, Suite 100, **Columbia**, MO 65202, Phone: 573-442-4537

For the purpose of this submittal, we have limited the number of resumes to those individuals who will be directly involved with this project. Resumes for any of our employees are available upon request.

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Gary D. Strack, P.E., SECB

Associate

Education
M.S.
Civil Engineering - Structural Emphasis
University of Kansas
B.S.
Civil Engineering
University of Missouri - Kansas City

Professional Registrations
Professional Engineer
AL, CA, FL, GA, IA, KS, LA, MO, MS, MT, NC, OK, TX, WI

Gary Strack is an Associate with SKW in the Infrastructure Services Department. Gary has more than 30 years of experience in structural engineering. His areas of emphasis include bridge design, analysis and inspection, as well as structural design, rehabilitation and renovation. In his role as the project manager for structural projects, his primary responsibilities include project management, business development, quality assurance reviews, project scheduling, preliminary and final designs, and construction documents. Gary is well-known throughout the industry and has many long-term clients with whom he has had a relationship with for more than a decade. He has the skills to successfully manage projects with multiple agency oversight, coordinating the needs and desires of multiple organizations.

As a licensed professional engineer in multiple states, Gary is known for his expertise in dealing with transportation projects revolving around bridges. In his career, he has worked on different aspects of bridge engineering for more than 200 structures. His inspection experience ranges from routine inspection and fracture critical inspection, to developing contract documents to rehabilitate or repair structures.

The following are representative projects for which Gary has provided structural engineering services:

- Veterans Boulevard Bridge Evaluation – Branson, MO
- MODOT Bridge Engineering Assistance Program (BEAP) – MO
- Design Redecking for four District 5 bridges – MO
- South Marietta St. Bridge Replacement – Excelsior Springs, MO
- Mission Road Bridge Design Over Rock Creek – Fairway, KS

Michael W. Stein, P.E.

Project Engineer

Education
B.S.
Civil Engineering
Kansas State University
Graduate Degree Studies
Civil Engineering - Structural Emphasis
Kansas State University

Professional Registrations
Professional Engineer
KS

Mike Stein serves as a Project Engineer in SKW's Infrastructure Services Department. As a project engineer, he is responsible for the design of bridges, concrete culverts, concrete retaining walls and segmental retaining walls (Versa-lok, Keystone and Mesa) reinforced with geogrid. He is responsible for structural design and construction administration, preparing contract documents in accordance with applicable codes, and also produces cost effective and constructible solutions to issues encountered during the construction and post construction phases of a project.

Since joining SKW in 2005, Mike has been involved with a number of award winning projects including the Mission Road Bridge, I-670 Utility Bridge, Briarcliff West Segmental Wall Structural Design, Cliffview Drive Bridges over Line Creek, and structural engineering services on MoDOT BRO bridge and culvert projects.

The projects below are indicative of Mike's structural engineering experience:

- Design Redecking for four District 5 bridges – MO
- MODOT Bridge Engineering Assistance Program (BEAP) – MO
- Mission Road Bridge Design Over Rock Creek – Fairway, KS
- MoDOT Route W Bridge Redecks - Kansas City, MO
- Smelser Road East BRO Bridge Replacement - Sedalia, MO

Dustin R. Berry, E.I.T.

Project Designer

Education
A.S.
Applied Science
Linn State Technical College
B.S.
Civil Engineering
University of Missouri
A.S.
Computer-Aided Drafting - Architecture
Central Missouri State University
B.S.
Computer-Aided Drafting - Structure
Central Missouri State University

Professional Registrations
American Design Drafting Assoc Certified Draftsman
MO

Engineer-in-Training
MO

Dustin Berry serves as a Project Designer in SKW's Infrastructure Services Department. He is an Engineer-in-Training whose work primarily focuses around structural design. Dustin has experience working on a variety of structural projects, including bridge design, structural construction, structure rehabilitation and structural evaluation. His typical work responsibilities include: preparing design calculations and specifications; managing projects and overseeing construction document preparation; performing site visits for structural evaluations and preparing recommendation reports; and working with contractors during the construction process to answer any questions they may have.

Dustin applies his experience in AutoCAD to prepare final bridge plans, add details, check information for accuracy, and prepare plans for the contractor. He is also familiar with design software programs such as Conspan, AISI BEAM, Culvert Master, Enercalc, ACAD and REVIT. Prior to joining SKW, Dustin served for 10 months as an electrical substation technician.

The following projects are indicative of Dustin's extensive project experience:

- MODOT Bridge Engineering Assistance Program (BEAP) – MO
- Callaway County FCB Inspection – MoDOT
- Upstream Channel Improvement Bridge - Macon, MO
- Silver Eagle Franklin Co Bridge Design – Franklin County, MO
- MoDOT BEAP W. Bellflower Study – Bellflower, MO

Michael E. Jones

Engineering Technician

Education
Certificate
Drafting Technology
Area Vocational Technical School - Kansas City, KS

Michael Jones serves as Engineering Technician in the Infrastructure Services Department. His primary responsibilities are project layout and detailing for the Structural Department and for all types of civil, sanitary, structural, and mechanical projects.

Michael has experience in MicroStation J, AutoCAD, and Microstation V8 XM Edition. He periodically attends courses to enhance his knowledge of the programs.

The following are representative projects for which Michael has provided engineering drafting services:

- Veterans Boulevard Bridge Evaluation - Branson, MO
- MODOT Bridge Engineering Assistance Program (BEAP) - MO
- South Marietta Street Bridge Replacement - Excelsior Springs, MO
- Strode Road Bridge Improvements - Independence, MO
- Smelser Road West BRO Bridge Replacement - Sedalia, MO
- Smelser Road East BRO Bridge Replacement - Sedalia, MO
- Easter Road Bridge Replacement - Pettis County, MO
- MoDOT Route W Bridge Redecks - Kansas City, MO
- Fracture Critical Bridge Inspection - Lawrence County

Education
M.S.
Civil Engineering
University of Missouri
B.S.
Civil Engineering
University of Kansas

Professional Registrations
LEED Accredited Professional

Professional Engineer
MO, KS, OK

Jerry Johnson, P.E., LEED AP

Principal, Manager - Infrastructure Services

Gerald (Jerry) Johnson has been with SKW since 1972 and presently serves as Principal, Department Manager of Infrastructure Services and Department Manager of Regional Development Services. Jerry has performed principal-in-charge, project management and design engineering services for both public and private clients. As a LEED accredited professional, he applies sustainable design principles to the engineering aspects of project development.

Jerry's design and project management experience is predominately within the civil and structural engineering fields. Typical civil projects include commercial/residential site development, roadways/highways, parking facilities, storm sewers and utility design. Typical structural projects include bridges, industrial buildings, utility bridges and heavy machinery foundations.

Jerry is knowledgeable and experienced in working with various governmental programs. Federal agencies include the Federal Highway Administration, Corps of Engineers, Department of Energy, National Oceanic and Atmospheric Administration, and Environmental Protection Agency; state agencies include the Missouri Department of Transportation, Missouri Department of Natural Resources, Missouri Division of Design and Construction, and Kansas State Department of Administration Facilities Management Office.
Mission Road Bridge Replacement

The projects below represent Jerry's extensive engineering and project management experience:

- Veterans Boulevard Bridge Evaluation – Branson, MO
- MODOT Bridge Engineering Assistance Program (BEAP) – MO
- Design Redecking for four District 5 bridges – MO
- South Marietta St. Bridge Replacement – Excelsior Springs, MO
- Mission Road Bridge Design Over Rock Creek – Fairway, KS

SCHEDULE

SKW understands the effect of construction scheduling on popular tourist areas such as Branson. To this end, we will complete the construction document preparation in time to bid this project in early 2012. This will allow construction to take place below the deck on the substructure during the summer while the bridge remains open. Then the bridge deck closure could be completed during the fall for the sidewalk and rail replacements, allowing the bridge to reopen in time for the Holiday rush.

We have carefully evaluated our team's projected workloads and staff availability and are committed to meeting this project schedule. SKW's current design work load under contract will be nearly complete before the Notice to Proceed is given, giving this project first priority. In order to ensure the project schedule is met, we will establish internal deadlines two weeks in advance of the desired milestone schedule which will negate unforeseen issues causing deadline slippage.

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PROJECT APPROACH

SKW's approach to this project will revolve around meeting two critical criteria: minimizing the construction impact to the tourist season and meeting the City's desired aesthetic treatment of the bridge.

The first critical criteria of minimizing the construction impact to the tourist season will require putting together the bid documents to allow the selected contractor to work under the bridge without impacting traffic usage during the busy summer months. Then during the slower fall months, the contractor can close the bridge to traffic and complete the rail, sidewalk and lighting replacements.

The second critical criteria of meeting the City's desired aesthetic treatment of the bridge will require early evaluation of the bridge structure capacities to determine if the upgrades are structurally feasible. Should the bridge have sufficient structural capacity, then we will develop preliminary plans of the desired improvements for City approval prior to preparing the final construction documents.

In the event, the bridge does not have sufficient structural capacity in the existing girders to support the additional loads, then SKW will investigate alternative strengthening measures which will allow the treatments to be included for the City's consideration. Should the City decide not to strengthen the bridge, then plans will be developed using a crash tested barrier in accordance with FHWA guidelines which will not require strengthening measures to be implemented.

We will use a Springfield firm, Anderson Engineering, Inc., to perform the survey, legal descriptions, and utility coordination efforts for this project. Their local knowledge will be key in preparing documents and coordinating efforts. SKW will handle the remaining project activities including, but not limited to, traffic control plans (detour routing), preparation of contract documents, preparing permit applications and coordinating with entities having jurisdiction over the project, analyzing the bridge structure for additional loadings, wetland investigation, Union Pacific and Missouri & Northern Arkansas Railroad coordination, new street lighting, and be available for questions during bidding.

The initial step of the project is one of the most important and that is to hold a project kick-off meeting before work has started with as many team members attending as possible (including agencies requiring permits or permission to work on the bridge)to start the project on the right foot. Regular conference calls or meetings with City staff will be conducted to keep team members on top of project progress. Since we have performed the BEAP study and are familiar with the bridge, we anticipate the design portion of the project to be completed fairly quickly.

SKW will handle the construction phase shop drawings, answering questions, lending technical support, meetings at the City's request, field review of the completed work by the contractor, and prepare as-constructed plans from City and/or contractor provided information upon project completion.

Shafer, Kline & Warren, Inc.

OFFICE LOCATIONS:

Columbia, North Kansas City, Macon, Chillicothe, Troy, Missouri
Lenexa, Iola, Kansas
Tulsa, Oklahoma
Houston, Texas

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McDONALD & WARGER, INC.
CONSULTING ENGINEERS

August 23, 2011

Mr. Keith Francis, P.E.
Assistant Director of Public Works
City of Branson
110 West Maddux Street, Suite 310
Branson, MO 65616

Re: Request for Proposal
Engineering Services for the Veteran's Boulevard Bridge Repairs

Dear Mr. Francis:

McDonald & Warger, Inc. is pleased to submit our response to your Request for Proposal for the above referenced project. Our firm is pleased to announce we have recently merged with the firm of Veenstra & Kimm, Inc. located in West Des Moines, Iowa. Veenstra & Kimm has provided services to clients throughout the state of Iowa since 1961. Their transportation services group is the fastest growing sector of the company.

On May 27, 2011, McDonald & Warger, Inc. became a division of Veenstra & Kimm, Inc. This merger provides McDonald & Warger, Inc. access to the 125 person staff of Veenstra & Kimm, Inc. to assist in providing design resources. McDonald & Warger, Inc. will continue to provide the same high quality professional bridge and roadway design services our clients have come to expect from us. These services will continue to be provided out of our Liberty, Missouri office. Our bridge and roadway design services will be enhanced by the broader based civil engineering experience and qualifications of Veenstra & Kimm, Inc. With the increase in available staff we now have the engineering, technical, business and financial resources to handle projects such as the Veteran's Boulevard Bridge Repairs while meeting any scheduling deadline.

McDonald & Warger, Inc. appreciates this opportunity to express our interest in this project and are very confident in our ability to provide the required services. We anxiously look forward to the interview process with the hope of an opportunity to introduce our firm to you and to discuss our qualifications and experience in greater detail.

We are very excited about this opportunity to provide professional engineering services to the City of Branson, Missouri. We look forward to establishing a working relationship with the City with the hope it will continue to grow in the years to come and be mutually beneficial to both the City and our firm. Should you have any questions concerning our firm's experience and qualifications, please do not hesitate to contact us at 816-781-6182 or dmcdonald@mandwengineers.com.

Sincerely,
McDONALD & WARGER, INC.

David L. McDonald

David McDonald, P.E.

INTRODUCTION

VETERAN'S BOULEVARD BRIDGE REPAIRS

McDonald & Warger, Inc. is pleased to submit our qualifications for providing the design of the Veteran's Boulevard Bridge Repairs Project. Our company is a division of Veenstra & Kimm, Inc., a consulting engineering firm providing professional services in the fields of bridges, highways, roadways, hydraulics, hydrology, retaining walls, environmental engineering and general civil engineering. We are confident in our ability to provide the required services for this project.

EXPERIENCE AND AVAILABILITY OF KEY PERSONNEL

McDonald & Warger, Inc. is a six person office established in 1985 and located in Liberty, Missouri. The Liberty office employs four professional civil engineers and two technicians. Professional registrations of personnel include licenses in Missouri and six other states.

The firm has experience in and provides infrastructure design services for several communities in the Kansas City Metropolitan area including Kansas City, Liberty, Lathrop, Trimble, Wood Heights, Kearney and Holt, all in Missouri. The services we have provided include the design and rehabilitation of bridges, roadways, sanitary sewer systems and water distribution systems.

McDonald & Warger, Inc. is very familiar with the design criteria and standards of local communities, the Missouri Department of Transportation, Federal Highway Administration and AASHTO as they relate to field surveys, preliminary design, final design, structural design, hydraulic design, right-of-way surveys and documents, soil surveys and construction standards and practices. This experience and knowledge would be incorporated into our design and construction services of this project.

In 2009, the firm performed three ADA sidewalk improvement projects along Route 76 in Branson under the ARRA and TE programs. Due to work with these projects, the firm's personnel is very familiar with the project location and associated aspects of the site.

CORE TEAM MEMBERS

For this project Roger Waltemath, P.E. will serve as Project Manager. Philip Schrick, P.E. and LeRoy Rader, P.E. will serve as Project Engineers.

Roger Waltemath has 32 years of structural and civil engineering experience. This experience includes the design and inspection of bridges, highways, and sewer and water systems. Philip Schrick has 26 years of experience in the design and plan production of various engineering projects including bridges, highways, roadways, sanitary sewers, water distribution systems, storm drainage systems, and FEMA Flood Insurance Studies. LeRoy Rader has over 47 years of civil engineering in the design and plan production of various civil projects including bridge drainage, highways, roadways, sanitary sewers, water distribution systems, storm drainage systems, pumping stations, flood control systems and FEMA Flood Insurance Studies.

The work will be performed by the Liberty office. Should the project require legal surveys for easement or right of way acquisition, we will enlist the services of McLaughlin Mueller, Inc., Professional Land Surveyors located in Liberty, Missouri.

PROPOSED SCHEDULE, CURRENT WORK LOAD AND PERSONNEL AVAILABILITY

The proposed schedule is as follows: Preliminary Design Phase – three months; Final Design Phase – three months. Total Design Phase length with reviews: eight months. The Construction Phase will be in addition to the Design Phase, based on the construction contract time.

Based upon our current workload and projected workload over the next year, the core team will be available for this project along with the necessary engineers, technicians and support staff.

EXPERIENCE ON SIMILAR PROJECTS

VETERAN'S BOULEVARD BRIDGE REPAIRS

1 ***HWY 123 OVER LITTLE SAC RIVER (STOCKTON LAKE) - Polk County, Missouri***
MoDOT contracted with our firm to design and prepare plans for the removal and replacement of the reinforced concrete deck for a seven-span, 587 foot structural steel girder bridge. The bridge carries a 28' - 0' wide roadway. The concrete rail was replaced with a reinforced concrete safety barrier curb and all expansion joints were replaced or eliminated. Shear studs were removed and replaced, and bearings were cleaned and reset. New slab drains were installed and the structural steel was cleaned, painted and/or coated. This project was a part of MoDOT's Safe and Sound Program. Contact: MoDOT; Bridge Division; Joyce Foster, Project Manager, (573) 751-370

2 ***60TH ST. BRIDGE& PARK AVE. BRIDGE REHABILITATIONS - Kansas City, Missouri***
These projects consisted of the inspection and design of repairs for two box culverts for the City of Kansas City Public Works Department. The 60th Street structure is a 1100 foot long, double 10 by 8 foot reinforced concrete box culvert. The Park Avenue structure is a 192 foot long, double 10.5 by 7.25 foot reinforced concrete box culvert. The project included a reporting phase comparing replacement and rehabilitation alternates for these and two other structures. It was cost effective to rehabilitate the 60th Street and the Park Avenue structures. Design plans included the mapping of the locations and classification of the concrete repairs by type and size. The scope of the work included over 16,000 square feet of concrete repairs and 1000 linear feet of crack and joint repairs. Repairs were quantified by priority and subject to elimination in order for the city to remain within the project budget. Contact: KCMO Capital Projects Office; James Wang, Project Manager (816) 513-2760.

3 ***RICHFIELD ROAD BRIDGE APPROACH REPAIRS - Liberty, Missouri***
The City of Liberty contracted with our firm to inspect and design repairs for the approaches of a three span bridge over the IC & E Railroad. The project initiated from a reporting phase through the Bridge Engineering Assistance Program (BEAP). From this report it was determined that the west approach pavement and sidewalk approaches on the west and east had experienced critical settlement and should be replaced with a structural slab and new sidewalks. Repairs and rock protection of the earthen spill slope that had subsided were also included in this project. The source of the problems was traced to poor drainage and ineffective storm inlets. These inlets were eliminated and the drainage diverted to downstation drainage facilities and away from the problem areas near the bridge. Contact: City of Liberty; Brian Hess, Asst. Director of Public Works/City Engineer (816) 439-4502.

4 ***CONDITION & REHABILITATION REPORT (THREE BRIDGES) - Carthage, Missouri***
McDonald & Warger, Inc. contracted with MoDOT through the BEAP to assist the City of Carthage, Missouri by developing a condition and rehabilitation report for three concrete structures in the City limits. The structures were considerably deteriorated due to poor deck drainage and salt penetration. McDonald & Warger, Inc. performed visual inspections of all three structures and documented the damaged and deteriorated areas. The firm then prepared a report noting the condition including deficiencies of the structures. Recommendations were based on staged rehabilitation of the bridges with early stages consisting of full or partial deck replacement and with later stages consisting of full replacement.

5 ***HWY 76 ADA SIDEWALK IMPROVEMENTS - Branson, Missouri***
MoDOT contracted with our firm to design and prepare plans for three sidewalk projects that involved extensive ADA improvements. Two of these projects were America Recovery and Reinvestment Act (ARRA) projects and one was a Transportation Enhancement (TE) project. The scope included over 4 miles of sidewalk improved with 470 new ADA curb ramps and 2200 feet of new sidewalk with ADA improvements, stormwater design, retaining walls and signage. Provisions were placed in the project for the contractor to minimize untimely disruptions to the entertainment district pedestrian and vehicular traffic. Contact: MoDOT, Southwest District; Ron Effland, Design Engineer, (417) 895-7649.

PROJECT APPROACH

VETERAN'S BOULEVARD BRIDGE REPAIRS

1 ***Start-Up*** **-** Meet with representatives of the City of Branson, the MNA Railroad, businesses and other stakeholders affected by the project. Introduce the project team members and establish the hierarchy of responsibility for the members and the method of individual contact throughout the project. Review and identify the minimum project requirements including the current Technical Specifications and Design Criteria of the City of Branson, the AASTHTO requirements for bridge design and rehabilitation, MoDOT bridge policies, AREMA criteria, and current ADA design policy requirements. Discuss coordination with the MNA Railroad during inspection and construction concerning access to private property and methods of inspection and construction. Determine permit and insurance requirements for access to railroad property. Establish traffic control guidelines when accessing the roadway portion of the structure. Discuss the impact of the inspection and construction with nearby businesses. Introduce the possibility of phasing construction to keep the bridge open.

2 ***Data Collection*** **-** Review the previous studies and investigations (including the MoDOT biennial inspection reports and the SKW BEAP Report) that have an impact on this project. Obtain as-constructed drawings, utility records and survey records. Obtain and review documented problems and concerns including stormwater drainage and emergency access.

3 ***Structural and Restoration Inspection*** **–** Although previous condition inspections of the bridge have taken place, a thorough condition inspection will be required to evaluate and to map areas to be repaired and restored for detailing and quantifying the work for plan preparation.

Prepare for inspection of exposed surfaces of the bridge. Obtain lifts and other appropriate equipment for access to all components of the bridge. Obtain traffic control devices for use as needed. Inspect concrete superstructure elements for cracks, spalls, scaling, honeycombing, map cracking, rust stains, moisture penetration, exposed rebar, etc. Areas of concrete showing evidence of deterioration shall be hammer sounded to determine extent of spalling or delamination. Areas of deterioration shall be recorded by type on sketch drawings of the member.

Examine substructure units for settlement. The abutments, piers and retaining walls shall be inspected for cracks, spalls, deteriorated pointing, moisture penetration, exposed rebar, etc. Areas of deterioration shall be recorded by type on sketch drawings of the member. Bridge seat areas shall be inspected to note defects in bearing pedestals, backwalls and bearings. Exposed footing elements shall also be noted. Any evidence of substructure movement shall be noted with a recommendation of subsurface investigation, if necessary.

Decks and overlays shall be checked visually for cracking, leaching, scaling, pot-holes, spalling or any other evidence of deterioration. The underside of the deck shall be examined for leaching, rust stains or other evidence of deterioration. Areas of slab defects shall be recorded on sketches of the deck undersides. Inspect and evaluate bridge deck joints, bridge drainage, railings, sidewalks, lighting, and approach guardrail, as appropriate.

Take random core samples of the deck for evaluation of compressive strength and chloride ion penetration. Meet with the City of Branson to discuss results of field investigations and inspections and discuss the need for additional nondestructive examinations and testing services. Conduct indepth nondestructive examinations, testing and inspections if necessary.

Digital pictures shall be taken of all structural defects and general views of bridge components with identification and descriptions added to each digital photo.

Meet with the City of Branson to report and discuss preliminary findings and results of the Structural and Restoration Inspection Phase.

4 ***Preliminary Study and Preliminary Plans*** - Obtain utility information from existing data bases, maps and atlases. Meet with utility company representatives and discuss possible conflicts with planned repairs and utility locations. Determine environmental concerns including wetland existence and the prevention of removal debris falling into Roark Creek.

A Preliminary Study is suggested at this time in order to evaluate alternates in addition to repair work. One alternate may be to consider construction of a pedestrian bridge as a separate project in conjunction with the removal of the existing undersized sidewalk. The evaluation of this alternate will be based on cost and the practicality of replacing and widening of the existing sidewalk. Another alternate is the evaluation of phasing the construction and keeping traffic open on the structure, as opposed to closing the viaduct during repair work.

Prepare preliminary plans outlining the areas of the structure to be repaired or modified. Repairs will be categorized by type of repair and extent of repair. The repairs will be prioritized in order to stay within a given budget. If available, reproductions of the existing bridge plans will be integrated into the plans to assist in the location and delineation of the repairs or modifications.

Prepare preliminary plans for improvements including the bridge sidewalk with barrier and fencing, and street lighting. Provide preliminary quantity calculations. Develop a cost estimate based on the calculated quantities.

Submit the plans and estimate for review by the City of Branson. Revise the plans and documents per review comments and resubmit.

5 ***Final Bridge Design, Plans, Specifications & Estimates*** - After approval of the Preliminary Plans, perform the design for any elements that are not restored to the components undeteriorated original condition. Evaluate the capacity of the structure to carry the new improvements by load rating the superstructure. Prepare final plans including details for the repairs of abutments, intermediate piers, girders, deck slab, foundation, bearing devices, diaphragms, and the construction and/or modification of the bridge sidewalk, barriers, fencing, lighting and abandonment of the water line. Prepare phasing plans if the decision is made to keep the bridge open.

Perform final quantity calculations of the bridge repairs and improvements based on the final plans. Include the final quantities on the plans. Develop a cost estimate based on the final quantities and a current construction cost database.

Prepare bid specifications for the project including technical provisions. Include special provisions for coordinating with the railroad and any phasing.

Submit the Final Plans, Specifications and Estimate for review. Meet with the City of Branson to discuss final review comments. Revise the final documents and resubmit.

6 ***Bidding and Construction*** - Assist the City of Branson during the advertising and bidding of the project. Answer questions and make interpretations of the bid documents for the prospective bidders. Attend a prebid meeting, bid opening and preconstruction conference as required. Assist the City of Branson in evaluating the bids submitted.

Review shop drawings for expansion joints, railing, fencing, lighting and other items to be installed. Make periodic visits to the site. Inspect areas of repair when the deteriorated material of the elements is removed to sound material. Coordinate with the City of Branson and the contractor when the conditions and/or the extent of repair are different from the inspections and plans. Assist the City of Branson in modifying limits or extent of repairs to provide the best restoration of the structure within the limits of the budget.

Meet with the Contractor and the City of Branson to perform a final inspection. Develop a punch list of items to be corrected by the Contractor.

7 ***Project Conclusion*** - Prepare “as-constructed” drawings from field measurements and observations by the City of Branson representatives or the Contractor. Meet with the City of Branson and finalize any remaining action items to conclude the project.

PROJECT COST COMPARISONS

McDONALD & WARGER, INC.

Project	Low Bid	Median Bid	Engineer's Opinion of Construction Costs
DeKalb Co. Project 21100111	$ 200,512	$ 242,479	$ 252,790
Harrison Co. Project's 00500031 & 0050006	406,275	485,499	501,700
Holt Co. Project 04000091	459,618	518,576	541,164
Clay Co. Project 20800061	451,799	538,852	485,453
DeKalb Co. Project 24200071	211,193	250,578	239,350
DeKalb Co. Project 37300021	255,331	314,458	293,513
DeKalb Co. Project 34000211	739,116	918,956	787,118
Polk Co. Project J850728	717,907	773,681	635,105
Polk Co. Project J850730	853,270	853,270	757,582
Boone Co. Project J5P0779	1,154,062	1,486,365	1,085,183
Moniteau Co. Project J550544	660,800	774,730	626,153
Daviess Co. Project J1S0584	687,716	768,907	745,838
Daviess Co. Project J1S0661	1,288,672	1,421,755	1,701,761
Lafayette Co. Project J450984	1,673,356	2,069,088	2,692,012

ROGER E. WALTEMATH, P.E.

PROJECT MANAGER

Registered Professional Engineer

Missouri, Kansas, Colorado, Texas, Arkansas, Nebraska

32 Years Experience

Mr. Waltemath has been involved in many areas of civil engineering. This experience includes the design of steel and concrete bridges including steel truss design, water and sewer systems and flood control systems. Field experience includes condition inspection and supervision of construction for roadways and bridges.

Mr. Waltemath was extensively involved in the bridge replacement program for the viaducts over the Kansas City Terminal Railway for the City of Kansas City, Missouri. This included condition inspection and load rating, preliminary and final design, preparation of plans and specifications for bidding, and construction consultation for city forces. Other responsibilities in the structural field have included the investigation of the structural integrity of existing buildings and railroad and highway bridges, and analysis of the safe load capacities for these structures.

During the year 1978 through 1980 Mr. Waltemath was involved in three (3) countywide bridge inspection projects in Western Missouri which were completed under the Bridge Engineering Assistance Program. Since joining the firm of McDonald & Warger, Inc. in 1985 he was extensively involved in seven (7) countywide inspection and load posting projects completed under the Federal-Aid Off-System Bridge Replacement and Rehabilitation Program. He has inspected, analyzed and rated over 1700 county bridges.

Mr. Waltemath was Project Engineer for eight (8) county bridge inspection projects which involved fracture critical inspection and analysis of 123 bridges. During inspection, consideration was also given to scour potential and the necessity for underwater inspection of foundations. The counties involved were Harrison, DeKalb, Howard, Carroll, Livingston, Linn, Saline and Chariton.

Mr. Waltemath completed the necessary training in November 1990 and is certified by the National Highway Institute for performing bridge inspections related to the requirements involving fracture critical members. He has also completed the nondestructive ultrasonic flaw detection course offered by the American Society for Nondestructive Testing.

During the past fifteen years Mr. Waltemath has been project engineer for the firm's involvement in the Bridge Engineering Assistance Program. He has conducted field observations, bridge analysis and ratings, repair and replacement recommendations and prepared the written reports for county bridges.

His experience includes condition inspections, load rating, preliminary and final design and preparation of construction documents for the McGee Street, Holmes Street, Vine Street and Brooklyn Avenue viaducts in Kansas City, Missouri. Mr. Waltemath was Project Engineer for the maintenance inspection of the High Line Elevated Structure, the High Line Connection and the North High Line Elevated Structure for the Kansas City Terminal Railway.

Mr. Waltemath was Project Engineer and Bridge Design Engineer for the Route FF Bridge over U.S. 71 in Jasper County and the 39th Street Bridge over U. S. 71 in Jackson County. These projects involved final design and plan production for continuous composite welded plate girders, open concrete column intermediate bents, non-integral concrete pile cap end bents and semi-deep concrete abutments.

PHILIP E. SCHRICK

PROJECT ENGINEER

Registered Professional Engineer

Missouri

26 Years Experience

Mr. Schrick has been involved in the design and plan production for various structural and civil projects. Responsibilities include the design of roadway and bridge projects and the hydraulic design of bridges and storm drainage.

Since joining the firm, Mr. Schrick has been involved in over twenty-six federal-aid off-system bridge replacement projects and numerous off-system replacement credit projects. His responsibilities have included bridge and roadway surveys, preliminary and final design, hydraulic design of bridge openings, development of vertical and horizontal geometry, plan production, quantity take-offs, contract documents and specifications, right-of-way documents, material testing and construction observations.

He was a Bridge Inspection Engineer for the firm's fracture critical inspection and analysis projects which involved 123 bridges in an eight county area. His duties included field inspection of bridges, fracture critical analysis of structures, writing inspection reports and field determination of scour potential and the need for underwater inspection of bridge foundations.

Mr. Schrick has recently been involved in the Bridge Engineering Assistance Program for the firm. He has conducted field observations, rated bridges, performed hydraulic computations and prepared reports for this program.

Mr. Schrick's field experience involves the condition inspection, load rating and analysis of bridges. Also included is construction inspection and material testing of bridge projects throughout Northwest Missouri. In November 1990 he attended a National Highway Institute course and is certified in the inspection of fracture critical bridge members.

Mr. Schrick was Project Manager for a Missouri Department of Transportation project in Gentry County on Route DD (J1S0811) involving a bridge replacement. He was also Project Engineer for two Daviess County projects on Route B (J1S0584 & J1S0661) involving two bridges, one box culvert and roadway design.

Mr. Schrick was design engineer for three bridges in Madison County, Missouri on which the firm was providing design and plan production services to the Missouri Department of Transportation. Bridge A5783 over Route E was a 2 span continuous composite plate girder structure and Bridges A5698 and A5699, twin structures on Route 67 over Route E, were 3 span prestressed concrete I-girder structures.

Mr. Schrick has conducted hydraulic studies for the design of bridges and other hydraulic structures. His experience involves the use of HEC-2 and HEC-RAS where Federal Flood Insurance is in effect and the FHWA HY-4-69, WSPRO and HEC-RAS for other bridge projects being designed under the Federal-Aid Off-System Bridge Rehabilitation.

LEROY A. RADER, P.E.

PROJECT ENGINEER
Registered Professional Engineer
Missouri
47 Years Experience

Mr. Rader has a wide range of experience in the fields of hydrologic and hydraulic design, including flood plain modeling using HEC-1, HEC-2, HEC-6, HEC-RAS, HECWRC, NWS, HMS, DAMBRK, SCS TR-20, HMR52, TR-55 and WSP-2. He has completed the Corps of Engineers Flood Plain Hydrology Training Course at Davis, California. Mr. Rader has indepth experience with the technical procedures of WRC Bulletin #17B, HYDRO-35, TP-40 and HMR51. He has been responsible for the coordination and management of 120 flood insurance studies in nine states. Mr. Rader is very experienced in the hydraulic and hydrologic theory on which these programs are based. He has completed the training program provided by the HEC hydrology and hydraulics training videos.

Mr. Rader has also acquired a wide range of experience in evaluating and designing sanitary collection systems and treatment facilities. He was the design engineer for the Birchwood Interceptor Sewer in Kansas City, Missouri. This project crossed under Interstate 435, through an existing golf course and terminated at the Big Blue Trunk Line. The project involved alternate studies for lines A, B and D. A capacity analysis for each line and alternate location was used to assist in selecting the most appropriate location. The project required soil borings to determine the subsurface conditions. Through subsurface exploration, it was discovered that the preferred alignment ran through an inactive and unknown sanitary landfill. Topographic surveys, property ownerships, permanent and temporary easements descriptions were finalized and supplied to the City, along with the final construction plans, specifications and cost estimate. The information was submitted to the City for construction. At the conclusion of the project, “As-Constructed” Plans were prepared and submitted to the City.

His experience includes the layout, design and plan preparation for water line distribution and sanitary sewer facilities in Kansas City, Missouri, Liberty, Missouri, Lathrop, Missouri, Kearney, Missouri, Kansas City, Kansas, and Edwardsville, Kansas. The Edwardsville, Kansas, facilities included a pump station and 11,000 feet of 12 inch force main connecting to a Kansas City, Kansas treatment plant.

Mr. Rader has accumulated vast experience in the design of water distribution systems, water line replacements and water line extensions. Mr. Rader has recently been the Project Manager for a water line extension for the construction of the Hosanna Lutheran Church, Liberty; the West College water line replacement, Liberty; Clinton County Water line extension, with the installation of a meter pit in Lathrop; analysis of the Clinton County PWSD No. 1 distribution system, Trimble; all in Missouri. Mr. Rader’s duties have included preliminary and final design, review of supplied and gathered information, assemblage of bid document and specifications, preparation of permanent and temporary easements, and application to the Missouri Department of Natural Resources for construction permits.

He has also prepared storm sewer plans, design and layout for sanitary sewer systems required to eliminate the failed septic tanks and lateral fields in the northwest part of Liberty, Missouri. Temporary and permanent easement documents were provided for each lot. Topographic surveys were provided including finished floor and basement elevations and the location of large trees that were to be saved, if feasible. Various sewer alignments were reviewed with the property owners. A sanitary sewer extension application for construction permit was prepared and submitted to the Missouri Department of Natural Resources.

Mr. Rader was project manager for the Perry County Pumping Stations, Perry County, Missouri. Services included the preparation of the FDM, the hydraulic design of inlet and outlet channels, sizing the pumps, motors and discharge piping, relief wells, levee access ramps, parking lots, preparation of final design plans, specifications, and cost estimates, for four interior flood control pumping stations.

DAVID H. McDONALD, P.E.

QUALITY ASSURANCE / QUALITY CONTROL
Registered Professional Engineer
Missouri, Kansas, Arizona, Oklahoma
36 Years Experience

Mr. McDonald has 36 years of specialized experience in highway and railroad bridges. This experience includes the design of all types of steel and concrete structures. Assignments have involved lead design, project engineer and project manager responsibility. He has experience in condition inspection, load rating, analysis and rehabilitation and construction management and inspection on bridge and roadway projects.

Since initiation of the Federal-Aid Off-System Program in Western Missouri, Mr. McDonald has been Project Manager or Project Engineer for Off-System Bridge Programs in nineteen (19) counties and five (5) cities. These projects have varied in scope from box culvert installations to bridge design for major stream crossings. Mr. McDonald has been involved in the bridge and roadway needs for cities, counties and states since 1974. During the past 36 years he has gained experience which allows him to understand the needs, problems and concerns of governmental officials as they relate to bridge engineering.

He has been Project Manager for seven (7) county-wide bridge inspection and load posting projects. The counties included in this program were Harrison, DeKalb, Andrew, Holt, Worth, Mercer and Platte during the years 1985, through 1987. As a result of these projects, Mr. McDonald developed a truss rating and simple span bridge rating program for the firm’s use. He was also Project Manager for eight (8) county bridge inspection projects, which involved fracture critical inspection and analysis, and scour potential determinations during the years of 1991, and 1992. The counties involved were Harrison, DeKalb, Howard, Carroll, Livingston, Linn, Saline and Chariton. During the past nine years Mr. McDonald has been the firm's project manager for the Bridge Engineering Assistance Program.

Mr. McDonald served as Project Manager for two (2) bridge and roadway projects on Route B in Daviess County for the Missouri Department of Transportation (J1S0584 & J1S0661) and a bridge project in Platte County west of Smithville on Route 92 (J4P1211).

He was Project Manager and Senior Bridge Design Engineer for the Route FF Bridge over U.S. 71 in Jasper County and the 39th Street Bridge over U. S. 71 in Jackson County. The Route FF Bridge involved final design and plan production for a two-span, 224' long, 75' wide bridge consisting of continuous composite welded plate girders with an open concrete column intermediate bent and semi-deep abutments. The 39th Street Bridge included final design and plan production of a two-span (103' - 114') continuous composite welded plate girder bridge with a 96.5' wide roadway. Substructure units consist of a semi-deep abutment, non-integral concrete pile cap end bent and a 4 column open concrete column intermediate bent.

Mr. McDonald has been extensively involved in computer programming and applications for the design, analysis, rating and detailing of bridges and hydraulic analysis. During his career as a consulting engineer, he has written computer programs to aid in the design of framed structures, prestressed concrete members of various sections, continuous beam analysis, hydrologic and hydraulic analysis, steel truss rating and various types of simple span bridge analysis. He has experience with service bureau software applications and communications when the design problem warrants the use of proprietary software. Most recently he has become familiar with commercially available software which has become available to aid the firm in the design and analysis of bridges, roadways, civil and hydrologic and hydraulic projects.

CITY OF **BRANSON**

Statement of Qualifications

to provide

Engineering Services

for the

Veteran's Boulevard Bridge Repairs

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

August 23, 2011

CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS

August 23, 2011

Mr. Keith Francis, P.E.
Assistant Director of Public Works
City of Branson
110 W. Maddux, Suite 310
Branson, Missouri 65616

RE: Proposal for Engineering Services for the Veteran's Boulevard Bridge Repairs

Dear Mr. Francis:

Crawford, Murphy & Tilly, Inc. (CMT) is very pleased to submit this proposal to provide professional engineering services for the City of Branson. CMT has established a reputation as one of the top transportation design firms in the State of Missouri as well as across the Midwest region and we are excited about the possibility of applying our engineering resources to this project to produce a timely and cost-efficient project for the City.

Since 1946, CMT has furnished consulting engineering services necessary to provide reliable infrastructure for our client's needs. Through our four business units – Highways & Bridges, Aviation, Water & Wastewater and Land Development – CMT provides a full range of civil engineering expertise along with support services such as electrical engineering, mechanical engineering, surveying and architectural support services. Our overall services include planning, design, and construction phase services on a wide range of infrastructure projects including: highway facilities, airports, municipal streets, water supplies, water storage and treatment, dams, bridges, stormwater facilities and industrial parks.

CMT's Highways & Bridges Unit has performed projects throughout the Midwest. Our clients for the Highways & Bridges Unit include state departments of transportation (MoDOT, IDOT, INDOT and ODOT) and municipal clients throughout the state and region. We are locally recognized as a preferred provider of these services to our clients and that is the primary reason for our repeat work with these agencies. Projects for these clients range from major freeway and interstate projects to local road and bridge projects. We have designed complex interchanges and performed Access Justification Reports and Environmental Impact Statements for large scale projects. Our bridge design experience ranges from complex major river crossings (bridges) to box culverts and small stream crossings. Roadway design has involved major interstate designs as well as local public roads. We have extensive experience in coordinating with State, Federal and private stakeholders, including railroad and utility companies. In addition, we have built our reputation on the ability to provide cost-effective designs while meeting aggressive schedules on all of our work.

We have studied and reviewed the available information on the Veteran's Boulevard Bridge and based on this information we have assembled a team that encompasses all the areas of expertise anticipated for this project. CMT will be the lead firm and will provide client liaison, agency coordination including railroad and environmental issues, roadway design, bridge design and construction site visits. Mathews & Associates, Inc. (Mathews), a local engineering firm, will be on our team to provide surveying and local coordination. A member of CMT's team, Steve Prange, will be working out of Mathews' Springfield office on other projects during this time period and will serve as CMT's local liaison for the project, as well as providing support during construction. CMT and Mathews have teamed on several successful projects throughout the area and this working relationship will enable the project to move smoothly throughout the design process.

Our team offers numerous strong points that will help the City obtain their goal of a safe, efficient bridge design:

- **Strong Project Manager.** Ron Breville, P.E., S.E. has over nineteen years experience managing and designing bridge projects. He recently was the structural engineer of record for the strengthening of the Route 266 bridge associated with the improvements at the Springfield-Branson National Airport, as well as overseeing the design of seven new bridges and the rehabilitation of two others on the new I-70 interchange for the New Mississippi River Bridge in St. Louis.
- **Local liaisons and local presence.** CMT will have a key representative in Steve Prange in the Springfield office of Mathews. His presence, along with that of Fred Mathews, will enable our team to be proactive in communications with the City and governing agencies.
- **Strong design team with qualified personnel**. Our team includes all the required disciplines to make this a successful project, including bridge designers, railroad experience, environmental engineers and roadway designers.

Our team stands ready to work with the City to complete this challenging project. We have an excellent record of performance in terms of cost control, utilizing innovative techniques for practical engineering solutions, providing cost-effective solutions and being able to meet schedules. We have the staff available to complete the work in a timely fashion and request the favorable consideration of the City for the pending project.

Sincerely,

Crawford, Murphy & Tilly, Inc.

Gregory L. Law, P.E.
Group Manager – Highways & Bridges

Ron Breville, P.E., S.E.
Project Manager

Office Locations

SPRINGFIELD, Illinois (Headquarters)
ST. LOUIS, Missouri
EDWARDSVILLE, Illinois
AURORA, Illinois
ROCKFORD, Illinois
PEORIA, Illinois
CHICAGO, Illinois
COLUMBUS, Ohio
INDIANAPOLIS, Indiana

Number of Employees

266

Number of Professional Engineers

123 plus 35 engineers in training

Number of Highway & Bridge Professionals

61

Crawford, Murphy & Tilly, Inc. Experience

Bridge Repairs Experience

CMT has extensive experience in evaluating and designing economical single span and multiple span vehicular and pedestrian bridges as well as various culvert types. The structural engineers at CMT have completed a wide variety of bridge projects that have a balance of functionality, aesthetic appeal and cost effectiveness while meeting the highest professional standards of constructability, durability, safety and client expectations. The following represents a brief overview of the types of bridges we have either designed, studied or inspected:

- Prestressed I-beams bridges
- Precast, prestressed concrete deck beam bridges
- Concrete slab bridges
- Single and multi-span horizontally curved steel plate girder bridges
- Bridge and culvert rehabilitation
- Steel stringer with cast-in-place concrete deck bridges
- Steel plate girder bridges, single span and multi-span
- Unusual roadway alignments and structure shapes
- Stage construction, temporary run-arounds, road closures and detours.

Bridge projects routinely consist of many diverse design elements that require other comprehensive professional service and an exceptional degree of project coordination. CMT is professionally qualified to offer this services as well as a wide array of other structural services as highlighted below:

- Bridge inspection services
- Retaining walls
- Noise walls
- Elevated tanks and standpipes
- Building
- Water treatment plant facilities
- Pump stations
- Mining facilities
- Structural investigations
- Pedestrian bridges
- Drainage structures
- Dams and levees
- Underground reservoirs
- Wastewater treatment plant facilities
- Above ground storage tanks
- Special structures

Work on the Veteran's Boulevard Bridge repairs project will be conducted from our St. Louis office in conjunction with our subconsultant Mathews & Associates, Inc., which is located in Springfield, Missouri. Following are several similar projects all of which were performed by St. Louis office staff.

Route 266 bridge

Relocated Route 266 and New Airport Boulevard

Springfield and Branson, Missouri

Highway and bridge improvements were required for approximately 1.5 miles of realigned Route 266 from I-44 to Farm Road 107. The scope also included 1.3 miles of new Airport Boulevard that connects to a new terminal building at the Springfield-Branson National Airport.

The project included two major bridges including Route 266 over I-44 and Airport Boulevard over existing railroad tracks. The Route 266 over I-44 structure was a rehabilitation of an existing structure and included deck repairs, girder repairs and concrete repairs to the end bents and intermediate bents. A new bridge carrying traffic over the railroad tracks was a 3-span structure and required coordination with the Burlington Northern-Santa Fe Railroad.

This project was accelerated from a 20-month design schedule and was completed in 7 months in order for the project to be completed before the opening of the new airport terminal. Other scope items included:

- Relocating and widening Route 266 from 2 lanes to 5 lanes.
- Improving geometry and traffic flow of the existing interchange ramps.
- Designing 5-legged roundabout.
- Multiple agency coordination – MoDOT, airport, county, FAA, railroad and public.
- Location studies/conceptual report.
- Right of way plans.

Madison Street bridge over I-70

I-70 interchange for the New Mississippi River Bridge

Missouri Department of Transportation

CMT was selected by MoDOT to provide the design of a new interchange that provided access to the New Mississippi River Bridge in downtown St. Louis. This high profile project included five new ramps providing movements to and from the new bridge to I-70 and I-44. The project was designed in 12 months. Due to a Practical Design Workshop early in the project and implementation of items identified in the workshop, a savings of over 20% was realized on the final construction cost versus the programmed amount.

The project included the design of 5 new bridges and 7 new retaining walls. Also included in the structural scope was the re-design of 3 other bridges. Two of these bridges were re-decked along with concrete repairs to the end abutments. Another structure was modified to accommodate new lanes being added to I-70. Architectural lighting and sidewalks were included on the rehabbed bridges. Other scope items included:

- Coordination with sewer district, FHWA, IDOT, MoDOT, utilities and City of St. Louis.
- Change in route marking document (FHWA requirement).
- Extensive sidewalk and ADA compliant design on roadways and on bridges.
- Demolition of 4 bridges and 2 buildings.
- Alternative analysis, preliminary, right of way and final plans.
- Major construction staging plans.

Route 61/67 Bridge over Meramec River

Missouri Department of Transportation

This major river crossing connecting Jefferson and St. Louis counties is a high volume traffic road that provides access for the many commuters going from Jefferson County into the St. Louis area for work and pleasure. MoDOT selected CMT to provide preliminary through final design for the approach roadways and the replacement bridge. The original 1933 structure was deficient and required immediate replacement by the time CMT came on board. An already fast schedule was accelerated and CMT met all the required milestones.

Meramec River Bridge

This 848-foot structure crossed a major river and required extensive environmental permitting including endangered species relocation and an extensive 404 Permit based on a large causeway that was used during construction. CMT provided the basic design for the causeway allowing the contractor some leeway to work with the type of equipment that was available. A detailed hydraulic analysis was required in order to achieve a no-rise certificate for this site as well. A sidewalk was added to one side of the bridge late in the design process to satisfy local interests. Architectural enhancements were included to present a gateway to Jefferson County for commuters entering from the St. Louis area. Other project components included:

- Alternative studies for raising approaches out of 100 year flood zone.
- Working with FEMA and SEMA to obtain permits to build on deed-restricted areas.
- Preliminary, right of way and final roadway plans for approaches to bridge.
- Preliminary and final design and plans for nine span, 848-foot bridge which carried 4 lanes of traffic.

Route BB Bridge

Missouri Department of Transportation

MoDOT chose CMT to provide the design of the replacement of this bridge in Camden County. During the design process, CMT researched cost savings measures and convinced MoDOT that the existing abutments could be utilized, along with a re-designed superstructure, and still meet all current codes and requirements. MoDOT approved this design which resulted in a 40 percent reduction of construction costs from the original estimated amount. Repairs to the abutments were included also. Other items included in the scope of work:

- Roadway design for roadway approaches.
- Right of way design (eliminated due to re-use of existing bridge components).
- Utility coordination.
- 404 Permit.

Route BB bridge in Camden County, Missouri

Rendering of Morgan Street Bridge

Morgan Street Bridge

City of Rockford, Illinois

When the City of Rockford was making plans to replace the aging Morgan Street Bridge, they envisioned a new bridge that would revitalize an isolated and impoverished area of town. CMT helped shape the vision by applying principles of context-sensitivity solutions to the bridge design process. CMT provided the design for the 532-foot landmark bridge which is a tied-arch bridge. The project included architectural enhancements. Other project scope items included:

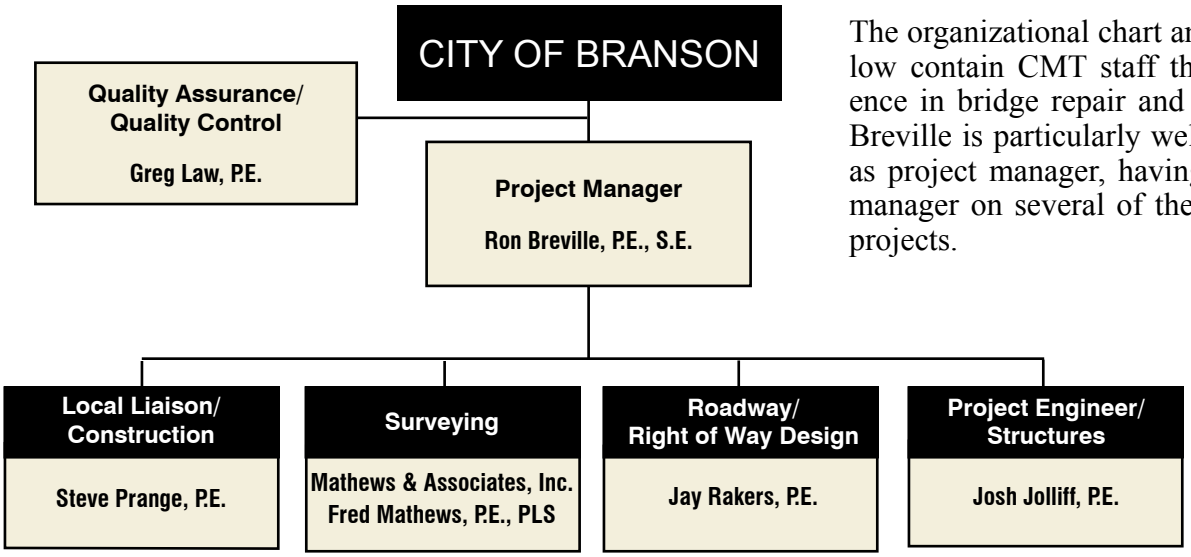
- Extensive stakeholder involvement.
- Use of recycled materials.
- VE study that generated numerous cost savings ideas.
- Preliminary/conceptual design through final design phase
- CMT was recently selected to provide construction phase services for the new bridge.

Interstate 55 Bridge Repairs

Illinois Department of Transportation

CMT was selected by IDOT to prepare preliminary plans through final plans for the rehabilitation of 21 bridges. These bridge repairs ranged from microsilica deck overlays to the complete rehab of the entire structure. Project scope included:

- Inspection and recommended repair work.
- Concrete deck repair.
- Scupper/drain replacement.
- Steel girder/beam repairs.
- End bent and intermediate bent repairs (concrete).
- Microsilica deck overlays.
- Railing repairs.
- Repairs to concrete box culverts.



The organizational chart and resumes that follow contain CMT staff that all have experience in bridge repair and rehabilitation. Ron Breville is particularly well-qualified to serve as project manager, having served as project manager on several of the referenced similar projects.

Ron Breville, P.E., S.E.
Project Manager

Ron serves as the lead structural engineer in the St. Louis Office of CMT and has over 19 years of experience providing project management and design on transportation projects. His experience includes being the lead engineer on numerous structural rehabilitation projects, as well as working with projects involving complex 404 permitting issues and railroad coordination. He is ideally suited for the role of project manager due to his experience in this area. He is highly respected by our clients, including MoDOT and IDOT bridge divisions, based on his technical abilities and his communication skills. Some of Ron's recent applicable experience includes:

- Lead bridge engineer for the Route 266 and New Airport Boulevard project at the Springfield-Branson National Airport. Ron was instrumental in completing this project ahead of schedule for our clients. Project scope included rehabilitation and repair of an existing bridge over I-44 and significant coordination with a railroad company.
- Lead bridge engineer for the I-70 interchange project for the new Mississippi River Bridge which included the repair and rehabilitation of 3 bridges and the design of 5 new bridges and 7 retaining walls. He led the bridge component of a Practical Design Workshop which led to $6 million in cost savings.
- Project engineer for the Route 61/67 Meramec River Bridge which had extensive environmental issues, as well as the design of a causeway for this major river crossing.
- Project manager for the Route BB bridge replacement project for MoDOT in Camden County. Ron's early analysis led to the repair versus the total replacement of the bridge and saved MoDOT 60 percent of the originally programmed cost estimate.

Greg Law, P.E.
Quality Assurance/Quality Control

Greg has over 30 years of experience in the transportation field. He currently serves as the Group Manager of the St. Louis Highways & Bridges Unit. Greg's role on this project would be to oversee the implementation of the QA/QC plan and to make sure that the project manager has the necessary resources to complete the project to the client's satisfaction. In his thirty year career Greg has served as resident engineer, design engineer, project manager and QA/QC reviewer on numerous highway and bridge projects. His relevant project experience includes:

- QA/QC for the Route 266 project, including both roadway and bridge designs.
- Project manager for the I-70 interchange project for MoDOT. High praise from our client was received regarding his work on this high-profile, fast-tracked project.
- Project manager for the Route 61/67 Meramec River Bridge. This project included significant hurdles to the completion, including: accelerated schedule by MoDOT, causeway design for contractor's access, numerous environmental issues including relocation of endangered species, and the first in the nation, federal deed restricted property acquisition for a project.
- QA/QC for the Route BB project for MoDOT.
- Project principal and QA/QC for I-55 and Route 231 interchange for MoDOT.
- Project manager for the O'Fallon Park Bridge over I-70 in St. Louis for MoDOT. Deliverables included the final bridge plans for a five-span structure.
- Project manager for the Gans Road interchange project in Columbia, Missouri.

Steve Prange, P.E.
Local Liaison/Construction

Steve has over 7 years experience providing construction inspection and design services on highway and bridge projects. Steve will be working out of Mathews & Associates, Inc. local office on several projects during the projected duration of this project and will serve as our team's local liaison. He has worked on several similar projects including:

- Morgan Street Bridge where he assisted in the design and checking of plans.
- Project engineer for $80 million reconstruction work for the Illinois Tollway.
- Resident engineer for construction inspection for a $37 million IDOT highway project on I-55.
- Design engineer for several roadway projects in Peoria, Illinois.
- Design engineer for project in Illinois on I-88 tollway.

Fred Mathews, P.E., PLS
Surveying

Fred Mathews has more than 25 years experience providing project management, transportation, civil engineering design and land surveying. Fred established MAI in 1985. He has been project manager for a variety of complex engineering projects involving all stages from initial study and planning to design and construction coordination.

Fred has managed projects involving transportation planning, highway and street design, roadway reconstruction, upgrades and expansions, rural ITS, intersection capacity and geometric improvements, route relocations, traffic signal design, signal interconnect system design, traffic operations and traffic management. He also participates in principal design.

He has served as the project manager on numerous local and state projects, and has been responsible for developing and ensuring conformity with the project scope, budget, schedule, principal design methodology as well as general design concept reviews.

He has an ongoing working relationship with MoDOT as well as regional city and county governments. Project experience includes the following.

- Design of intersection relocation at U.S. 160 and Weaver Road, Springfield, Missouri, including new signal, paving, drainage, geometric improvements, lane additions, ADA compliant sidewalk and pedestrian route.
- Design of three signalized intersections at I-44 and Spur Drive, widening from 3 to 5 lanes, paving, drainage, geometric improvements, ADA compliant sidewalk and pedestrian route.
- Design of intersection modifications for dual-left turns and the extension of Kansas Expressway at Republic Road in Springfield, Missouri. The signal will be modified to conform to the new islands, medians and sidewalks for ADA compliance.
- Design project involved improving the intersections of the Kansas Expressway and Sunshine Street in all directions by reconstruction the existing medians, islands, widening, signal design and appurtenances as necessary for dual left turn lanes at all approaches while maintaining right turn lanes and access restrictions.

R. Jay Rakers, P.E.
Roadway/Right-of Way Design

Jay has over 14 years of providing and managing roadway/highway design projects for CMT. One of Jay's strengths is applying good design principals while still keeping the construction costs to a minimum. This includes the design of roadway plans for right of way issues. Jay also has a strong construction background which helps in his ability to provide traffic control plans on complicated projects. Some of his recent experience includes:

- Project manager for the relocated Route 266 and New Airport Boulevard project. Jay led the efforts to reduce costs, meet an aggressive schedule and still provide quality plans for this strategically important project.
- Project engineer for the roadway/highway design on the I-70 interchange project in St. Louis. Major drainage facilities, lighting, signing, five major ramps and tight right of way issues were a few of the challenges addressed on this project.
- Jay led the roadway design and utility coordination n the Route BB project for MoDOT.

Jay is the main project manager for roadway and highway projects for the St. Louis office where he has managed 8 different, challenging projects over the last three years.

Josh Jolliff, P.E.
Project Engineer/Structural Design

Josh has ten years of design experience working for CMT in the Highways & Bridges Unit. His areas of expertise include structural/bridge design where he has worked on more than 20 bridges during his career at CMT. In addition, Josh leads our hydraulic/scour analysis on bridge and culvert projects. A listing of project similar to the pending project includes:

- Structural designer for the Route 266 bridges.
- Led the design efforts for two of the new bridges and one repair bridge for the I-70 interchange project for MoDOT.
- Structural designer for the Meramec River Bridge.
- Lead structural designer for the Morgan Street Bridge in Rockford, Illinois. This was a signature bridge and included a tied-arch structure.
- Design engineer on the Route BB Bridge for MoDOT.

Approach to Conducting and Completing the Project

Introduction

The City of Branson has concerns for the safety and appearance of the Veteran's Boulevard Bridge, a major vehicular access for the downtown area. Crawford, Murphy & Tilly, Inc. has put together an approach to the project that will enable our Team to provide a timely and efficient solution to the necessary repairs.

Approach to the Project

The approach is similar to that used on other CMT projects that have been successfully completed. Several concepts will be implemented on the Veteran's Boulevard Bridge repairs project to enable us to meet the goals of the City of Branson in producing a buildable set of construction documents that are cost efficient.

Quality Assurance Plan

The first step is to complete a Quality Assurance Plan (QAP). The QAP will be completed prior to the start of any work and will encompass all areas of the project. The purpose of this document is to maintain a direction for the flow of work, identify standards for the design, keep all stakeholders including the City informed about the tasks associated with the project and provide a means to verify checks are being conducted throughout the design.

The first step in the QAP process is the kick-off meeting where all personnel associated with the project are invited to attend a meeting to discuss the requirements and schedule for the project. The QAP has several key components to assist the Team in their work. These include a project description along with a location sketch, standards to be used during design, special design features, key roles of the project team members and a design checklist. The design checklist will be used throughout the duration of the project to check that important design issues are addressed and documents these items as being completed. At the end of the project the QAP will be signed by the project manager and QA/QC reviewer and provided to the City with a Statement of Compliance.

Data Collection

Early data collection of pertinent data will be a key in enabling this project to be a success. Team members will be identified and be responsible for the acquisition of data for use during the project. Some of the areas required early would be existing bridge data, surveys, railroad contacts, utility information, right of way locates and possible environmental concerns. Our Team has all of these areas covered by personnel experienced in each of these technical tasks. Our goal would be to identify and obtain the required information in order for the schedule to be easily met.

Communication

Communication is an essential component in the success of any project; however on this project we anticipate it to be very important. Communication within the Team, communication with the City and communication with governing agencies will be critical to ensure that the correct information and approvals are obtained in a timely fashion. One of the CMT Team's strengths is the ability to communicate requirements and concepts concisely in order to keep momentum in the project's forward progress. Ron Breville, our project manager, is very successful at using communication as a tool to keep the project on track. In addition our local resources, Fred Mathews and Steve Prange have knowledge of the area and procedures of local jurisdictions and will be able to meet with City representatives on short notice if needed.

Project Challenges

Through our review of the project scope and supplemental information acquired regarding the Veteran's Boulevard Bridge our Team has identified the following project specific challenges:

Design Challenges

Structural Design Components. Several tasks related to the design of the structural members will need to be designed and thoroughly reviewed by personnel experienced in this type of work, including repairs to deck, girders and concrete bents. The design of a new bridge is straightforward compared to the design of repairs for an existing bridge. Our Team has extensive experience in rehabilitation work on bridges. Identifying alternative methods of construction as well as innovative ideas in materials will be researched by our structural team that has over 60 years experience (3 engineers) in this type of design to help achieve the goals of a safe, economic design.

Adding Sidewalk. This portion of the design is a specialized area that CMT has completed several successful projects in the recent past. Knowledge of the current codes is essential for this task. In addition options will need to be reviewed to determine the most economical sections to use so as not to overstress existing structural members. Construction methods are a large consideration also and our staff has extensive experience in construction methods. We also make ourselves familiar with standards that are used by other states to possibly use in a design. By using this concept we have saved millions of dollars on other projects, resulting in winning MoDOT's first Practical Design Award for a consultant.

Architectural Enhancements. CMT has architects available to assist the engineering staff in the selection of cost-efficient enhancements to bridges. Several recent bridge projects by our Team included architectural fencing and lighting components along with adding architectural features to such items as concrete abutments and concrete fluting on intermediate bents.

Roadway Expertise. Considerations for eliminating right of way takes are critical to meeting any aggressive schedule. A careful examination of this area will be conducted early in the design to enable our Team to make adjustments to plans if necessary to minimize any takes, since any acquisition could add several months or more to the project timetable. The plats and descriptions will be completed by our local subconsultant who is familiar with the requirements of the City. Our roadway designers have worked on some very challenging detour and construction staging plans recently. We bring this knowledge base to these projects from our formal "Lessons Learned" process to better assist in completing this task of the project.

Causeway and Environmental

CMT has recently designed a causeway very similar to that which will be required for the pending project. This causeway will likely require a 404 Permit. Our experience indicates that providing the contractor with a basic plan that allows the use of different construction techniques provides the better bidding arrangement while still providing enough information to obtain the required permit. It is not anticipated that any major environmental concerns will be encountered on this project. However our Team has extensive experience providing environmental documentation and has an excellent relationship with the governing agencies that represent this area. We will work with the appropriate agencies if any environmental issues arise on design the Veteran's Boulevard Bridge project and will be proactive in getting early consensus and resolution.

Railroad Coordination

Working adjacent to or above railroads can always have an impact on the schedule of a project. Our recent success on several projects has taught us that early and clear communications is key to getting fast results. We have several personnel, including our project manager, that have had extensive dealings with railroads. We will identify constraints and keep in contact with the appropriate personnel in order to expedite reviews and negotiations.

Utilities

Utility companies bring their own unique set of design requirements to each project. A senior engineer will be assigned to coordinating with the utilities and keeping the City informed as the work with utilities progresses. Having a local presence with local knowledge will assist our Team in completing any utility relocates and coordination.

Past Performance and Availability

The CMT team brings a stable, experienced and established workforce to this project and the City of Branson. This stable workforce preserves our institutional knowledge that we have gained through our many years of experience, thus developing effective working relationships with the governing agencies that will have an interest in this project. CMT's quality of construction documents, the ability to provide economical designs and our past experience in this specialized type of design have contributed to the repeat work we obtain through our client base. The personnel assigned to this project are available to complete this project per the proposed schedule included and will meet any accelerated schedule the City propose. We stand ready to complete this project for the City of Branson and hope to add the City to our list of satisfied customers.

Table of Similar Project History

	Contract Design Schedule (months)	Actual Design Time (months)	Engineers' Estimate of Cost	Bid Price
Lions Den Rd., Phase 1, St. Louis County	18	18	$2,226,000	$2,915,000
Lions Den Rd., Phase 2, St. Louis County	18	18	$1,671,000	$1,546,000
Lions Den Rd., Phase 3, St. Louis County	18	17	$1,800,000	$1,627,000
Church Rd., Arnold, MO	12	10	$6,365,000	$6,137,000
Goodfellow Blvd., St. Louis	14	14	$2,900,000	$2,700,000
Page Ave., Woodstone to Harvester, MoDOT	9	9	$23,700,000	$19,700,000
I-44 and Elmont Rd., Sullivan, MO	24	21	$11,005,400	$11,665,000
Route 100, Washington, MO	24	10	$5,950,000	$6,170,000
Route 266/Airport Rd., Springfield, MO (MoDOT)	20	7	$14,200,000	$11,915,000
Gans Road/Route 63, Columbia, MO	18	13	$7,854,500	$7,926,097
Meramec River Bridge, St. Louis MO (MoDOT)	14	12	$9,267,000	$9,115,000
Route 100, Washington, MO	24	10	$6,000,000	$6,100,000
Hamilton-Carr Greenway, Wildwood, MO	9	6	$376,000	$335,000
West Terra Lane, O'Fallon, MO	13	13	$1,335,000	$1,470,000
Mississippi River Bridge I-70 Projects	12	12	$34,700,000	$30,300,000

Proposed Project Schedule

Tasks	Nov. 11	Dec. 11	Jan. 12	Feb. 12	Mar. 12	Apr. 12	May 12	June 12	July 12
Surveys									
Field inspection/data collection									
404 Permit (causeway)									
Structural design									
Architectural enhancements									
Right of way									
Roadway design									
Railroad coordination									
Utility coordination									
Agency review									
Bidding/construction								X	

Assumes a November notice to proceed.

CMT will work with the City of Branson to meet a more accelerated schedule, if requested by the City.

CFS ENGINEERS

cfse.com

One Vision. One Team. One Call.

and

CJW

PROPOSAL

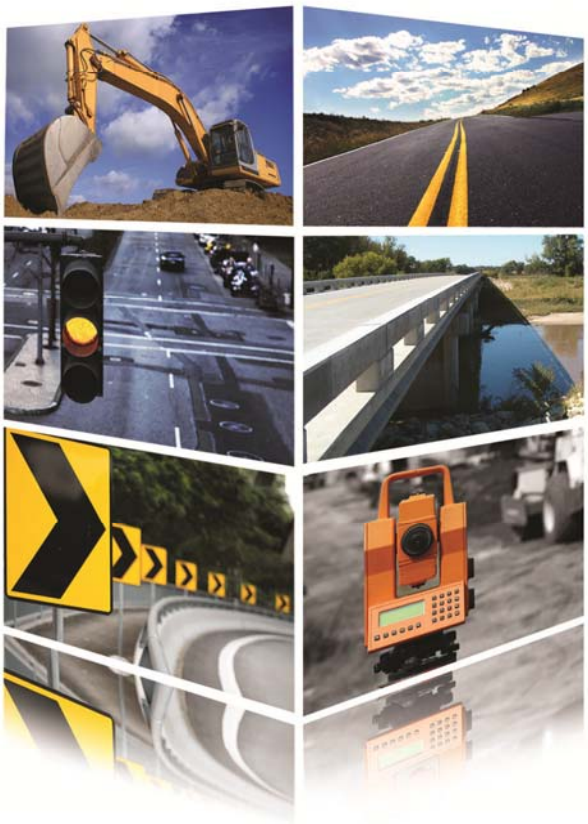
FOR

ENGINEERING SERVICES

For the Veteran's Boulevard
Bridge Repairs

Presented to
City of Branson, Missouri
Engineering & Public Works

August 23, 2011



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Ste 700
Kansas City, KS 66103
913.627.9040

TOPEKA, KS
2930 Woodside Dr.
Topeka, KS 66604
785.272.4706

WICHITA, KS
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Wichita, KS 67205
316.722.6880

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cfse.com

Other Offices:
Kansas City, Kansas
Topeka, Kansas
Manhattan, Kansas
Wichita, Kansas

August 23, 2011

Mr. David H. Miller, P.E.
Director of Public Works
110 West Maddux St., Suite 310
Branson, MO 65616

Re: Request for Proposal
Engineering Services for the Veteran's Boulevard Bridge Repairs

Dear Mr. Miller:

Cook, Flatt & Strobel (CFS) Engineers, P.A. is pleased to express our interest and qualifications for providing engineering services for the City of Branson, Missouri. We are also excited to team with CJW Transportation Consultants, a partner we have worked with on many projects over the last five years and a firm who has also worked with Branson. Differentiating one team from another is a difficult task. That is why choosing a team with significant experience and knowledge is paramount. CFS is confident our staff, with their depth of understanding and capability, stands above the rest.

Our team strengths are as follows:

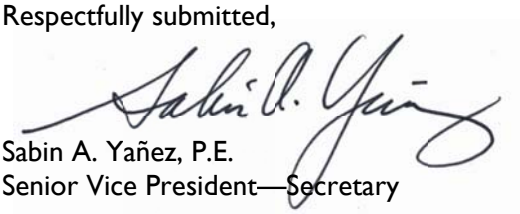
- The CFS Team is local and has maintained a long professional history and has had a great working relationship with Branson,
- The CFS' Team is a collaboration of members with extensive creative experience and continuity
- CFS has recent experience working with a railroad on transportation projects involving grade separation components
- Our staff is immediately available to start and finish in an expedited fashion

The included information illustrates the professional qualifications and experience that make the CFS Team well qualified for this project. Our team believes the key to your project's success will be the personnel identified to deliver the work and our ability to foster a strong working relationship with City staff, affected agencies and property owners in your community.

Please review the history of some of our past projects and our clients; you will find an extremely dedicated, capable staff.

Your consideration is sincerely appreciated. CFS welcomes the opportunity to be part of your team and is ready to deliver a successful project.

Respectfully submitted,



Sabin A. Yañez, P.E.
Senior Vice President—Secretary

BRIDGE QUALIFICATIONS / EXPERIENCE

CFS Engineers has specialized in county, state and municipal bridge replacement/rehabilitation projects for 50 years, including extensive planning, design, management and construction supervision for bridge improvement projects in Missouri, Kansas and Oklahoma. Our firm has placed under contract over 60 bridge replacement/repair projects in the last three years. Our extensive level of continual project involvement provides a solid base in addressing project requirements.

CFS has worked for over 80 Missouri and Kansas Counties and has designed over 1500 bridges in the last 50 years.

CFS has provided engineering services for 60 bridges in southwest Missouri since 1990.

SIMILAR PROJECTS / EXPERIENCE

The following list is a <u>partial</u> list of bridge projects our firm has completed in Missouri since 1995.

Rte. C over Scattering Creek	This project included bridge memorandum, design layout documents for deck replacement and other bridge repairs, design of final plans and estimates.	Audrain Co.
Green Hills Road over Rte. 152	This project included bridge memorandum, layout of soundings, preliminary bridge design and final design plans.	Platte Co.
Rte. 152 over Line Creek Pkwy	This project included bridge memorandum, layout of soundings, preliminary bridge design and final design plans.	Platte Co.
Rte. 13 over Little Pole Cat Creek	Design for deck replacement and other repairs. Design final plans and estimates	Harrison Co.
Rte. 13 over Pole Cat Creek	Design for deck replacement and other repairs. Design final plans and estimates.	Harrison Co.
Rte. 13 over Cypress Creek	Design for deck replacement and other bridge repairs. Design final plans and estimates.	Harrison Co.
Rte. W over West Fork Big Creek	Design for deck replacement and other bridge repairs. Design final plans and estimates.	Harrison Co.
Rte. H over Long Branch Creek	Design for deck replacement and other bridge repairs. Design final plans and estimates.	Gentry Co.
Rte. H over Hickory Creek	Design for deck replacement and other bridge repairs. Design final plans and estimates.	Gentry Co.
Rte. 13 over Hickory Creek	Design for deck replacement and other bridge repairs. Design final plans and estimates.	Daviess Co.

ADDITIONAL EXPERIENCE

Argosy Casino Parkway North, bridge over Line Creek - Construction of a new 9/10 mile roadway and **two bridges** including removal of an existing at grade railroad crossing to improve access to the Argosy Casino / Entertainment District in Riverside, Missouri. The first bridge was a 475' two span bridge over the BNSF Railroad, which included a 10 foot bicycle/pedestrian trail with street lighting and decorative fencing. The second bridge was a total deck replacement that tied into the existing levee system. CFS was responsible for transportation and bridge planning and design, utility and railroad coordination and coordination with MoDOT, US Army Corps of Engineers, and Riverside Quindaro Bend Levee District. This project had a strict deadline for completion and even with a 3 month weather delay, was completed on time.

U.S. 71 & North Cass Parkway Interchange , Cass County, MO, MoDOT – As a part of this interchange project, CFS completed design plans for a new interchange bridge over U.S. 71. This bridge included significant components of MoDOT's Practical Design approach, in an effort to save overall project costs but still was designed with sidewalks and widening for potential multimodal use in the future. This project was delivered on schedule and under budget.

U.S. 50 Bridge @ Lone Jack (American Reinvestment and Recovery Act (ARRA) project), MoDOT - CFS was selected by MoDOT to fast-track the design of a new bridge structure at the U.S. 50 interchange in Lone Jack, Missouri. This project was part of the ARRA projects for MoDOT and had to be delivered by a November 2009 hard deadline. CFS met this goal and the project was constructed in 2010.

Steamboat Landing Pedestrian Bridge, Phase II, Warsaw, MO – As part of an overall city-wide trail project, CFS completed design and construction administration for a 120' two span pedestrian bridge across a small cove along the Osage River/Lake of the Ozarks in Warsaw. The project involved the coordination, review and permitting with MoDOT and the US Army Corps of Engineers.

Stadium Boulevard Roadway Widening and Corridor Improvements, Columbia, MO - CFS is currently designing major roadway improvements to one of the busiest corridors in Columbia. This project is adding new lanes of roadway with major geometric revisions to intersections, design of an enclosed storm sewer system, sidewalks, bike lanes, pedestrian median refuges, major parking revisions, new traffic signals with interconnection and lighting. CFS is working closely with the City of Columbia, MoDOT, local utilities and multiple Transportation Development Districts. CFS has been using practical design applications and developing ways to manage the budget for this "Cost Share" project. The project is currently estimated to stay within or below the funding budget. This project will be built in multiple phases with the first phase constructed and open in spring of 2011.

COMPLETING PROJECTS ON TIME AND AT/UNDER BUDGET

A Recent Project Performance List includes the following:

- ARRA Projects, Warsaw, Missouri
  In 2010 CFS was able to prepare design and construction documents for $4,000,000 of ARRA funded infrastructure improvements for the City of Warsaw. CFS had performed preliminary investigations to determine the scope of improvements for City-wide sanitary sewer deficiencies, upgrades to the municipal sewage treatment plant, a new maintenance building and channel repairs. CFS completed all surveying, design plans, construction drawings and contract documents in approximately **6 weeks** to meet the ARRA schedule. This work would normally require **6 months** to complete. CFS subsequently provided construction administration and observation for the 4 projects, which were completed within budget in late 2010.

- Kansas City Design Build Projects, Kansas City, Missouri
  CFS is currently working for the City of Kansas City, Missouri on 3 Design Build Projects for street reconstruction, including drainage structures and sidewalks. These projects are requiring that all intersections be reconstructed to provide ADA compliant curb ramps. All projects are being constructed under traffic. The City required that these projects be fast-tracked with very short schedule for delivery. CFS was recognized as being the first of the engineering firms selected to get their project under construction. All 3 of the projects are currently under construction.

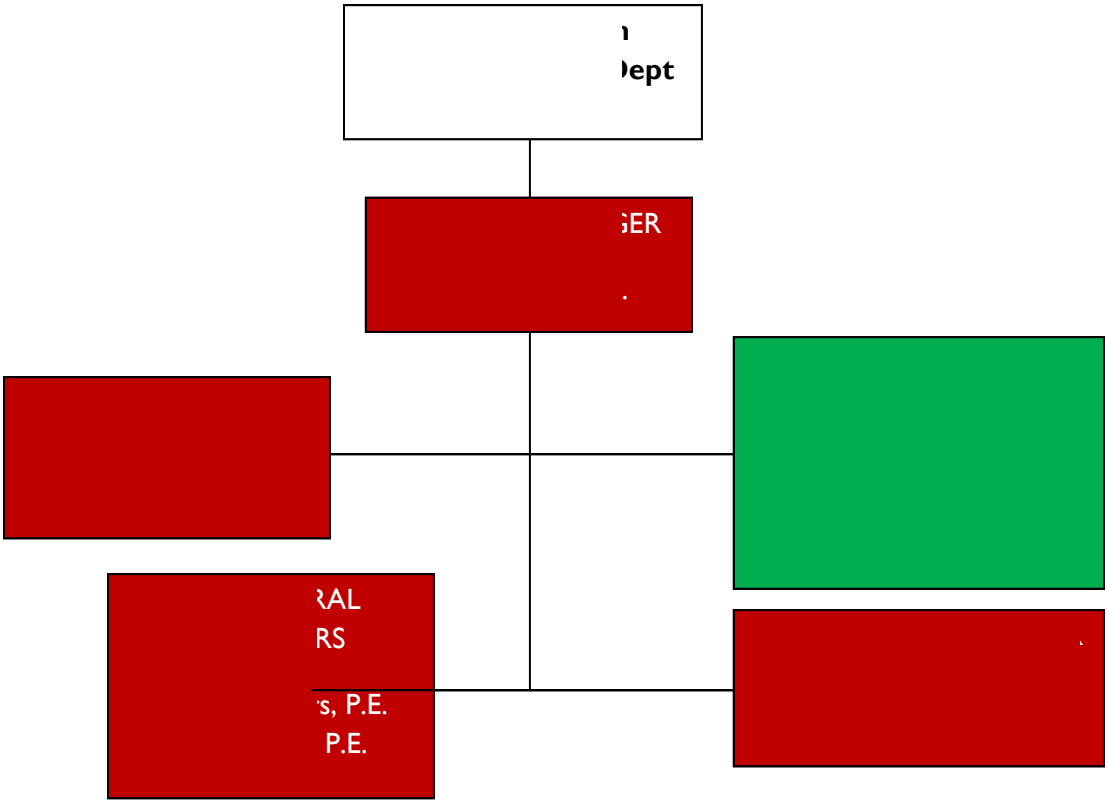
- Longview Road, Kansas City, Missouri
  CFS completed the design of Phase 1 of Longview Road reconstruction and widening in late Summer of 2009. This project was performed for Jackson County and the City of Kansas City, Missouri, and involved complete street reconstruction with storm sewers, sidewalks, lighting and several storm water detention/bio-retention ponds to alleviate localized storm runoff problems. This $1.55 Million project was completed under budget in late 2010.

- Downtown Streetscape Improvements, Warsaw, Missouri
  This project included reconstruction of sidewalks and parking along Washington Street and Van Buren Street around the Benton County Courthouse Square. The project provided ADA accessible curb ramps, ADA access to buildings and parking, along with ornamental lighting, landscaping, pavers, revised street parking and a new off-street parking facility. This project came in under budget and was constructed in the summer of 2010. CFS provided property and topographic surveys, engineering design and construction administration.

- U.S. 169 Interchanges , 96th & 108th Streets, MoDOT, Kansas City, Missouri
  CFS is part of a design team that was retained by MoDOT to design $20 million worth of urban roadway improvements, including two new interchanges and reconstruction of 108th Street and 96th Street along the U.S. 169 corridor in Clay County, Missouri. CFS was responsible for all survey and right of way exhibits and descriptions for the entire project and responsible for the design of over a mile of relocated 108th Street, as a divided parkway with enclosed storm drainage system. Our design team was able to move from "Notice to Proceed" to Final Plan completion, including survey and property research in a little over **3 months** time.

ORGANIZATIONAL CHART

Our proposed team is as follows:



KEY PERSONNEL

CFS has experienced a drop in workload over the last year. Senior staff listed below is immediately available for this project.

Sabin Yañez, P.E., Principal in Charge, Project Manager - Mr. Yañez joined CFS in 2004 and has over 26 years of Transportation Planning, Project Development, Traffic/Intelligent Transportation Systems Management & Operations and Administrative experience. With CFS, Mr. Yañez has been integral in leading long-range planning and project development efforts with many communities. Mr. Yañez served as the District Engineer for the eight-county Kansas City district, where he worked closely with city and county officials, the Mid-America Regional Council (MARC), the Kansas City Area Transportation Authority (KCATA), and other community groups concerned with emerging transportation issues. Mr. Yañez has frequently been retained by local public agencies to coordinate projects specifically with MoDOT.

Rick Walker, P.E., Senior Project Engineer - Mr. Walker has over 25 years of experience and joined CFS in 2009. His background includes experience in management, business development and project management design and production. Mr. Walker has additional expertise in surveying, hydrology, hydraulics and transportation facilities design. Notable project experience includes the City of Mission's downtown

redevelopment project which encompassed reconstruction of Roe Boulevard, Johnson Drive, Nall Avenue, Roeland Drive, and Martway Street in the vicinity of the former Mission Mall site. Rick also completed utility relocation designs associated with the KC Icon, Kansas City's landmark Paseo Bridge replacement project.

Bob Chambers, P.E., Structural Engineer- Mr. Chambers currently serves as the firm's Structural Design Engineer for highway bridges and culverts and structural inventory and appraisal (SI&A). He has also served as CFS' lead engineer on KDOT's "On-Call" contracts. He has approximately 31 years of experience and has worked as client contact for KDOT, MoDOT and several counties throughout Kansas and Missouri.

Kenny Blair, P.E., Structural Engineer- Mr. Blair is the Structural, Design and Hydraulic Engineer in responsible charge of the firm's overall bridge design and structural inventory and appraisal procedures. He has approximately 33 years of experience and his background includes extensive work with local, state and federal agencies.

Tom Ingram, P.E., Water Resource Engineer - Mr. Ingram has worked on the design and analysis of drainage systems, sanitary sewer systems and open channels throughout Missouri, Kansas and Oklahoma. The aspects of design, research and analysis include basic pressure and gravity flow analysis of pipelines and pipe systems, drainage inlet analysis, watershed and sewerage-shed hydrology and flow generation, detention and retention systems, design of Best Management Practices facilities, cost-estimating and cost-benefit analysis for project planning, flooding and open-channel analysis of floodways, preparation of administrative and technical construction specification documents for bidding construction projects, flood and disaster repair coordination with FEMA and the Kansas Division of Emergency Management, and the review of other consultant's work pertaining to compliance with local city standard design codes.

Jay Wynn, P.E., PTOE, Senior Traffic Engineer, CJW Transportation Consultants
Mr. Wynn has over 24 years experience in civil engineering and land transportation planning and design, including traffic impact studies, analytical studies of traffic control problems, corridor and land use origin – destination studies. Mr. Wynn's expertise extends to technical design for municipal infrastructure, lighting systems, signal timing & operation, signal system control and optimization, intersection capacity analysis, intersection geometrics, level of service studies, land use studies, volume/capacity analysis, accident reconstruction and investigation, preparation of construction plans, specifications and bid documents, project management, contract administration and construction inspection.

Tom Dancey, P.E., PTOE, Senior Traffic Engineer, CJW Transportation Consultants - Mr. Dancey has more than 15 years of experience in the field of engineering. He has been involved in a variety of traffic engineering and planning studies throughout the United States. His responsibilities have included project management, coordination with public and private clients, preparation of detailed traffic signal plans, intersection geometric improvements, and safety, impact, corridor, and signal warrant

studies. Mr. Dancey has supervised the data collection, trip generation and distribution, analysis, mitigation measures for the impact of proposed development and existing roadway networks, and design and deployment of advanced traffic management and traveler information systems.

James Gray, PLS, Survey Manager, CJW Transportation Consultants – Mr. Gray is a Professional Land Surveyor for CJW Transportation with 18 years of experience in land surveying and mapping. Jim joined CJW in February 2007 as Survey Manager and has completed a variety of land surveying project while working with CJW. His expertise includes boundary surveying, design surveying, right-of-way establishment, construction staking, and property records research.

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CJW Transportation Consultants
5051 S. National
Suite 4-110
Springfield, MO 65810
O: 417.889.3400

PROPOSED SCHEDULE

The CFS Team is confident that this project can be accelerated so as to minimize the disruptions to downtown Branson businesses. Listed below is a general schedule for delivery of the design for this project.

3 months……	Field survey, deck investigation, chain mapping, coring, testing, preliminary estimate
3 months……	50% plans, estimate, presentation to City Council
3 months……	90% plans, estimate
1 month…….	100% final plans, specifications, estimate

*** We also would propose the City give some strong consideration to providing an incentive for early completion to the contractor. We have included this type of approach on other projects and have found it to be quite successful accelerating project completion. We propose to provide you some alternatives for consideration as the project moves through design.*

PROJECT APPROACH

As we evaluated this project, our Team has identified four critical issues that must be dealt with to ensure a successful project. The issues are:

1) Bridge condition evaluation/verification
2) Maintenance of Traffic during construction
3) Railroad and US Army Corps of Engineers coordination
4) Utility relocations

A brief description of our approach for each of these issues follows.

Bridge Condition/Evaluation

CFS Engineers' recommendation would be to perform an in-depth structural investigation of the existing bridge complete with rating and detailed cost estimate prior to proceeding with the repair details. This bridge is 80+ years old and could have significant damage to the concrete and steel that is not visible to the naked eye. A detailed bridge deck investigation should include chain mapping, concrete coring, and testing for chloride-ion content. An in-depth study of this bridge's structural condition will supply the City of Branson with the data necessary to make informed decisions concerning repairs and their associated costs.

If the City of Branson chooses to proceed with the repair of the Veteran's Boulevard Bridge we would supply several options for increasing the sidewalk width such as cantilever extensions or adding new beams. Another option would be to build a completely separate pedestrian bridge that is not attached to this 80 year old structure. This would allow you to increase the bridge deck width and provide extra "shy" distance for vehicles next to the barrier rails.

Substructure repairs on structures this old can be difficult and often deteriorate shortly after being installed. A composite fiber reinforcing wrap may be a good option for deteriorated pier beams and columns. Also expansion joints need to be repaired to prevent continued water intrusion onto the substructure elements.

Bridge aesthetics have always been a major focus of our firm. Several of our bridges have won awards for their use of form liners, lighting, pedestrian fencing, and use of sculpture. All aesthetics would be designed to blend and complement with the new Branson Landing Boulevard Bridge.

Maintenance of Traffic

The successful completion of this bridge maintenance project along Veteran's Boulevard hinges on the ability of the contractor to complete the work in a timely manner while minimizing the impact of the project on its constituents and surroundings. The Project Team will provide a maintenance of traffic plan that will utilize the Branson Landing Boulevard bridge as a detour while the Veteran's Boulevard bridge is fully closed in order to maximize project progress.

The Project Team will coordinate with the City and land/business owners in order to provide an acceptable plan to accommodate both the construction schedule and the needs of the public. While maintaining access to the properties both north and south of the Veteran's Boulevard bridge, through traffic will be rerouted to the adjacent Branson Landing Boulevard bridge.

In addition to detour signing, signing can be provided to indicate that all businesses are open and accessible, especially the businesses between Skaggs Road and Main Street along Veteran's Boulevard. The Veteran's Boulevard leg of the roundabout can be signed for "ROARK VACATION RESORT TRAFFIC ONLY". South of the Roark Vacation Resort entrance, Type 3 barricades will restrict southbound access to the roadway for construction traffic only. Resort traffic will be diverted northbound from the entrance, while construction traffic will still be able to access the bridge project from the potential staging area south of the roundabout. At the intersection of Veteran's Boulevard and Atlantic Street, a soft closure with Type 3 barricades, a "ROAD CLOSED TO THROUGH TRAFFIC" sign, and business signing along with detour signing will be used to indicate that the road is still accessible for local traffic. From this point, traffic can access businesses and residences north of Atlantic Street. However, just north of the Taney Motel entrance, a hard closure to all vehicular and pedestrian traffic will be required south of the bridge. The through traffic will follow the detour signs along Atlantic Street, Commercial Street, and Branson Landing Boulevard to get to either side of Veteran's Boulevard.

The Project Team will coordinate with the City and MoDOT to determine appropriate management of detour traffic at both ends of and along the detour where signal timing and phasing may be a concern. The signal at Commercial Street and Branson Landing Boulevard will be most affected by the proposed detour because it will experience the most significant change in turning movement volumes. The additional traffic along Branson Landing Boulevard bridge itself will not be a significant issue because Branson Landing Boulevard has been handling a more significant traffic detour over the past year. The Highway 76/Business 65 bridge project to the south has required the diversion of approximately 20,000 vehicles per day compared to the 12,000 vehicles per day that will be diverted for this project.

In addition to the detour plan, temporary traffic control plans will be prepared for each phase of construction in accordance with the Manual on Uniform Traffic Control devices, 2009 Edition and all revisions thereto.

Railroad and US Army Corps of Engineers coordination

For a project of this nature we propose that during the initial planning, we invite the Missouri & Northern Arkansas Railroad to participate so they will be aware of any initial design concepts we create. We will schedule a meeting with MNA staff once preliminary plans are complete so they can complete their review as quickly as possible. We are familiar with the permitting process that will be required once plans are approved and will ensure that this is taken care of so when a contractor is selected, the permit is in hand.

It is our intention to use a similar process for working with the U.S. Army Corps of Engineers so they are familiar with any proposed work along Roark Creek and have approved the plans for construction.

We know both of these processes can take a significant amount of time and therefore will be identified as "critical path" items for the project.

Utility Relocations

Lastly, we are aware of the abandoned water line attached to the bridge and your desire to have it removed and capped. This should be a straightforward process but will require coordination with the City Utility Department. There are a number of other utility attachments on the bridge that will demand close attention during design. Our Team proposes to hold meetings with the Utility companies (initially when we have completed preliminary plans, then a series of meetings after that point) to guarantee that any work proposed for the bridge has taken into account the utility locations. For any conflicts that cannot be resolved we will immediately develop a relocation plan with the utility and integrate that schedule into the overall project schedule.

City of Branson

Veterans Bridge Rehabilitation Project

Statement of Qualifications

August 2011

McCLELLAND CONSULTING ENGINEERS, INC.
DESIGNED TO SERVE

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PO Box 1229
Fayetteville, AR 72702
www.mcclelland-engrs.com

MYERS-BEATTY ENGINEERING

Veterans Bridge Rehabilitation

McClelland Consulting Engineers, Inc., and Myers Beatty Engineering, Inc., have more than 84 years of combined experience in the design and rehabilitation of vehicular bridges spanning waterways and railways.

ABOUT MCE

McClelland Consulting Engineers, Inc., is a multi-disciplined engineering firm specializing in civil engineering, environmental engineering, geotechnical engineering, structural engineering, environmental laboratory analysis, construction management and surveying. Established in Fayetteville, Ark., in 1963, MCE has grown to become one of the largest consulting firms in the state counting more than 50 municipalities as clients.

MCE has enlisted the services of James S. Beatty, PE, of Myers-Beatty Engineering, Inc., located in Van Buren, Ark., to provide additional specialized expertise in bridge design and rehabilitation. A principal in the firm, Mr. Beatty serves as the firm's primary bridge design engineer.

MCE has a long history, approaching 50 years, serving the transportation and infrastructural needs of municipalities large and small. Our company has provided design plans, specifications and construction inspection services for a variety of bridge projects including rehabilitation and new design for both vehicular and pedestrian bridges.

The McClelland firm operates out of two offices - Fayetteville, Ark., and Little Rock, Ark., where we employ a staff of approximately 80 qualified individuals. MCE is licensed to operate in Missouri, Arkansas and Oklahoma. Our Fayetteville office's close proximity will provide quick response to unforeseen circumstances and will primarily service the City of Branson for the Veterans Bridge Rehabilitation Project. McClelland Consulting Engineers, Inc., routinely and effectively services municipal clients located within a three hour driving distance from our offices. At only 90 miles and less than two hours from our Fayetteville office to the City of Branson, MCE is available on short notice to address any unforeseeable issues and any other needs the City may have.

Our staff includes 15 Licensed Professional Engineers, 20 Degreed Engineers, three Licensed Professional Land Surveyors, one Graduate Landscape Architect, one Construction Engineer and one Certified Senior Engineering Technician, all of whom will be available to assist the City of Branson as the project requires. We also employ LEED Accredited Professionals, and as a company, we are committed to keeping sustainability and environmental issues in mind. We offer ways in which "green solutions" can improve a project's bottom line while developing engineering solutions for projects both large and small.

PROJECT COMPLETION - ON TIME & WITHIN BUDGET

We endeavor to professionally represent our clients while providing high quality designs utilizing the latest technology. One method MCE utilizes contract management as one means to ensure projects are completed on time and within budget. We establish mutually agreed upon written contracts with all of our clients to ensure that parties involved understand the scope of work and project parameters. In conjunction with these projects, MCE presents progress reports throughout the course of project to keep all parties informed. We believe excellent communication is vital to completing a project on time and within budget.

As projects progress, it is sometimes necessary to revise contract documents to expand the scope of work or to develop and distribute change orders. Reasons for contract revisions are most often due to circumstances that are unforeseeable by any party involved that may come to light during preliminary project development. Change orders, which we avoid whenever possible by offering excellent, well-thought design, are necessary to compensate for design specifications that need to be changed. We maintain positive industry relationships to mitigate any issues that may be caused when change orders are necessary. Again, we believe that communication, early and often, is the key to successful project completion.

We further strive to meet project schedules through cooperation with the Owner and by taking into account the impact of weather. Construction schedules are formulated to accommodate these and other contingencies. We are very proud to report that most projects undertaken by MCE have been successfully completed to the highest standards within our control, on time and within budget.

FINANCIAL STABILITY

Financial stability is essential to the operation of a successful company. As MCE continues to operate under a third generation of ownership, the financial status of the firm remains strong. Historically we have been able to consistently meet a biweekly payroll while maintaining prompt payments to vendors and subcontractors. No liens for payment are being held against this company. The following are indices of our financial stability:

- In addition to our consistent ability to meet a biweekly payroll, a profit sharing program has been established for our employees. A corporate contribution has been made to this program every year since initiating the plan in 1979.
- MCE has enjoyed steady growth through the years. Our staff has increased from 47 to approximately 80 employees.
- An important indication of our financial stability lies in the diverse number of services we offer. In other words, our eggs are not all in one basket. By offering services in a variety of disciplines, we are protected against temporary market swings.
- In addition to the standard services such as engineering, drafting, and surveying, MCE offers geotechnical drilling and investigative services, construction and materials testing laboratory, water and wastewater chemistry laboratory services, and a variety of environmental services.
- Our financial position is somewhat protected from catastrophic failure by the various types and coverages of insurance policies. A certificate of insurance for a specific project can be issued upon request.

CADD (COMPUTER AIDED DRAFTING AND DESIGN)

MCE utilizes the latest computer technology (AutoCAD 2012, Civil 3D 2012 and EaglePoint Software 2009) to provide an integral link among our clients, engineers and surveyors. Drawings, maps and plats in formats from black-and-white to multi-colored three-dimensional files are developed through a CAD-based computer network. We operate 31 computer stations with AutoCAD software.

APPLICATIONS FOR FUNDING

The McClelland firm understands the importance that funding assistance plays in fostering community and economic growth. Our experience navigating the funding application process is unmatched, and we are committed to helping you obtain funding necessary to further your projects. MCE staff routinely communicates and interacts with various State and Federal agency personnel and attend workshops to stay familiar with programs available to aid our clients. MCE has a reputation as an organization that assists its clients with securing funding, and we provide these services on a regular basis. We are ready, able and willing to complete any required forms, applications and engineering reports to assist our clients in obtaining funding.

STATE AND FEDERAL COMPLIANCE

MCE has completed many projects funded by state and federal agencies that require compliance with the Davis-Bacon Labor Law. Contractors must include affirmative action documents with their bids when submitting to work on projects funded by government agencies such as EDA, USDA-Rural Development or HUD. Our bid instructions also require contractors to submit construction progress schedules when they receive Notice to Proceed, begin and end a significant milestone and upon completion of construction. We adhere to the Uniform Acquisition Act, should fee-title land or easements be required as part of the project. Throughout a project, our engineers organize and conduct meetings with the Owner, appropriate agencies involved and the Contractor in an effort to keep everyone informed.

COMPETITIVE SEALED-BID PROCUREMENT

All project manuals published by MCE include complete bid submittal instructions in accordance with appropriate agency guidelines and all state and federal laws. We have worked with many of the contractors and are able to analyze their bids accurately. MCE project managers conduct pre-construction conferences between Owners and Contractors on all projects to cover critical information and assist in answering questions. Additional meetings are held on a regular basis during construction to facilitate Owner and Contractor communication. We have developed a system to track projects under construction while maintaining budgets and time constraints.

DEDUCTIVE ALTERNATE BID ITEMS

Considering that the actual cost of construction is not directly controlled by the Engineer, we sometimes open bids in amounts that are greater than our clients have budgeted. In an effort to keep adjustments as convenient as possible and to keep our projects on schedule without delays required for re-bidding, we often formulate our bid proposal forms with deductive alternate bid items. This practice has successfully controlled costs and completion times.

CONSTRUCTION PHASE SERVICES

MCE has full-time field personnel that provide construction observation. These employees are supervised by a graduate construction engineer and are capable of handling field layout and observation functions, as well as any changes made during construction. Field observers are guided by project engineers that review shop drawings and complete progress reports and final pay estimates. Experienced observers are a strong part of our quality assurance program. Monitoring activities provides an up-to-date progress report on construction phases and subsequent project performance.

CONSTRUCTION MATERIALS TESTING & LAB ANALYSIS

To provide analysis for construction materials, MCE utilizes an in-house laboratory. This facility is equipped with current technology and provides a quick turn around on test results. Our construction materials testing lab complies with the American Standards for Testing Materials (ASTM) requirements.

This is an important advantage that we offer over most of our competitors - the ability to provide in-house geotechnical exploration and analysis of subsurface materials. This in-house capability normally reduces the time period required for preliminary design while minimizing exposure to misunderstanding the conclusions/ recommendations provided by our-of-house consultants.

SUBSURFACE EXPLORATION/GEOTECHNICAL INVESTIGATION

For geotechnical investigations, MCE utilizes a CME-45B Auger-Core Drill mounted on a one-ton four wheel drive truck. This configuration provides MCE with more mobility in restricted areas than larger drill units. Applications include foundations, soil or rock sounding, monitoring wells with sample testing by our Environmental Laboratory, and soil sampling for underground tank and Phase II Environmental Site Assessments.

TESTING SERVICES

Geotechnical Testing

- Atterberg Limits
- Bearing Ratio of Soil
- Consolidation Tests
- Lime Stabilization Limits
- Moisture Content
- Particle Size Analysis
- Potential Volume Change
- Shrinkage Limits
- Unconfined Compressive Strength
- Unit Dry Weight
- Field Torvane Testing
- Hand Penetrometer Testing

Construction & Materials Testing

- Bolted Connection Inspection
- Concrete Slump Testing
- Concrete Air Content
- Concrete Cylinders
- Marshall Quality Assurance Testing
- Core Testing for Thickness and Density
- Nuclear Density Testing

PERFORMANCE & PROJECT TEAM

Our commitment to our clients is that our service be second to none in professionally representing project owners while providing the highest of quality designs and drawings utilizing the latest technology. MCE company policy requires our professional personnel to make return calls to clients within 24 hours.

Part of a consulting engineer's responsibility is to utilize the right teams of staff members for each project. Great care is taken in evaluating potential projects and assigning appropriate staff. We have selected well-qualified personnel including company principals as well as a bridge design engineer specialist subconsultant to assist the City of Branson with the rehabilitation of Veterans Bridge.

At MCE, our Principals are active members of project teams. MCE Principals provide not only management and direction; they also become intimately involved in a project's conception and design. Daniel Barnes, PE, who serves as president of MCE's Fayetteville office will serve as your project director. Mr. Barnes oversees projects to ensure that they are moving forward without delays and reviews drawings providing an additional level of assurance in our quality control process. Mr. Barnes is always up-to-date on the status of ongoing projects.

Your Project Manager will be Ryan Gill, PE, a Senior Associate of McClelland Consulting Engineers, Inc., with 10 years of civil engineering experience. Mr. Gill is licensed as a Professional Engineer in both Missouri and Arkansas. Mr. Gill has provided services for pedestrian bridge projects in both Huntsville and Green Forest, Ark., and he has also provided oversight for the installation of a pedestrian bridge to the City of Alma.

Engineering design support will be provided by James Beatty, PE, a partner at Myers Beatty Engineering, Inc. He is the firm's primary bridge design engineer. Mr. Beatty's main focus is the design and detailing of bridges, and he also provides services related to buildings for commercial, education and healthcare facilities. He has over 34 years of design experience, including 17 years in the Bridge Division of the Arkansas Highway and Transportation Department. Completed projects with the AHTD included the new bridge over the Red River; I-540 bridge over Frog Bayou, Arkansas Missouri Railroad and State Highway 282; State Highway 282 over I-540; U.S. Highway 65 over the Buffalo River and State Highway 18 over the St. Francis River. He has been project manager for multi-bridge projects, overseeing completion of bridge design and details to meet AASHTO Specifications and Highway and Transportation Department Construction Specifications. Mr. Beatty has designed numerous bridges using reinforced concrete slabs, composite steel beams and girders and precase, prestressed girders. Specifically relevant to the Veterans Bridge Rehabilitation project, Mr. Beatty performed design for repairs to 14th Street Bridge over the Union Pacific Railroad as a part of a repair project for five bridges within the City of Little Rock, Ark. He also provided designs for repair to the Jefferson Street Bridge over Union Pacific Railroad in Van Buren, Ark., which was suffering from collision damage to exterior girders on a span over an access road which resulted in cracked and bent steel girders. Deteriorated bridge bearings and ends of beams were repaired while the bridge was closed for the more major repairs of the girders and beams.

R. Wayne Jones, PE, will also provide engineering support on the Veterans Bridge Rehabilitation project. Mr. Jones, a 35-year employee of MCE, has experience providing engineering services and has worked on multiple bridge projects, vehicular and pedestrian alike. Some of Mr. Jones' previous projects include the University of Arkansas Lot 56 Parking Access Bridge, the three span A-W Realty & Arkansas Western Gas Co. Bridge and Street and Repair of Woolsey Bridge which was structurally damaged by a semi-tractor trailer during inclement weather. As a part of the Woolsey Bridge Repair, Mr. Jones provided visual inspection of the structural damage, determined which members needed replacement or repair and developed a plan for repair work. Adequate support during construction was integral in this project. Mr. Jones has also provided services for the Bud Walton Arena Pedestrian Bridge, Wilson Park Trail Bridge and Scull Creek Pedestrian Bridges. Presently, Mr. Jones is providing professional services to the City of Prairie Grove related to the replacement of the Illinois Chapel Road Bridge, a 40 foot wide bridge damaged by flood waters on two occasions during Spring 2011.

In addition to our experience in bridge rehabiliation, MCE also has an in-house geotechnical division available to perform geotechnical analysis and construction materials testing services for all project types. Our geotechnical division is also overseen by Mr. Jones, and support is provided by Julia Foreman, PE. Mr. Jones has nearly 40 years of experience providing geotechnical investigations and analysis, construction materials testing and structural design. Ms. Foreman holds a master's degree in civil engineering with an emphasis in asphalt mixture design & testing. She has six years of experience in construction materials testing and has served as an assistant laboratory manager and performance proctor for the Center for Training Transportation Professionals, the certifying agency for Arkansas State

Highway & Transportation Department. Ms. Foreman is certified the the AHTD as a technician capable of providing Basic Aggregates Testing, Hot-Mix Asphalt Concrete Testing and Soils Testing Technician. Our in-house geotechnical ability affords MCE the opportunity to, usually, require less time for preliminary design. The risk of misunderstanding results/recommendations provided by out-of-house consultants is also greatly reduced, because we are experienced in performing these tests ourselves; and because the majority of our staff has firsthand knowledge of how to properly perform these tests, we better understand the results and their implications on a project's design.

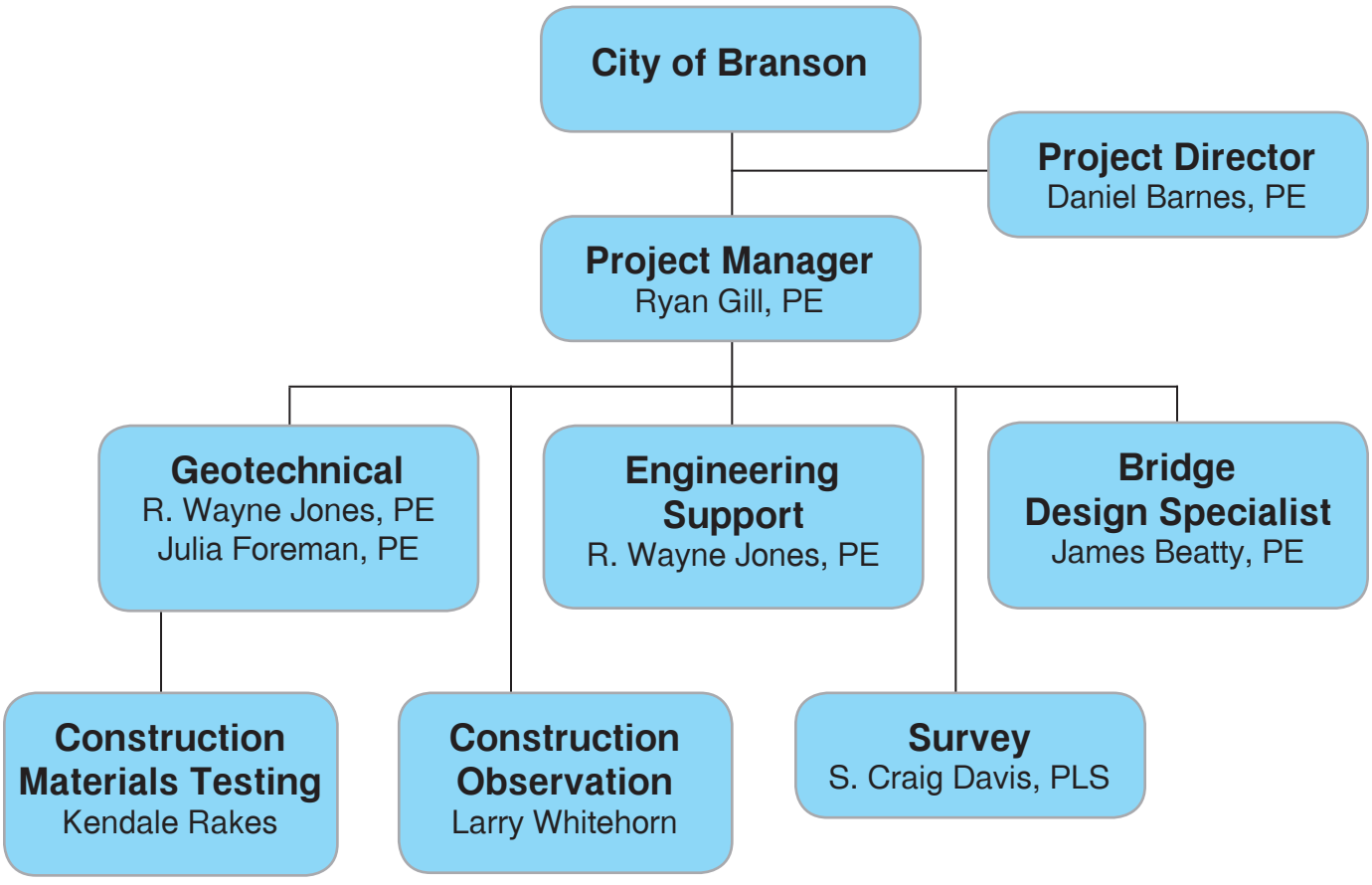
McClelland Consulting Engineers, Inc., engineering staff routinely handles multiple projects. We are committed to giving each individual project the time and attention required to ensure that our clients are well-informed and the designs we produce are well-thought and provide the appropriate solutions. Our company assists more than 50 municipalities, most of whom are repeat clients. We believe this shows the level of attention, detail and competency we bring to each project of which we are a part. The City of Branson can be confident that we will spend the necessary time to produce high-quality, detailed designs and specifications of the rehabilitation of Branson's Veterans Bridge.

SURVEYING & MAPPING

MCE understands that there is limited public right-of-way surrounding the bridge. Should additional right-of-way, permanent easements or temporary construction easements be required to complete rehabilitation work, MCE understands that we will be responsible for all survey work necessary to develop legal descriptions for these acquisitions including easement and/or right-of-way sketches for use in explaining the taking to an affected property owner.

We believe that behind every successful project design team is an experienced professional survey crew. MCE will utilize the services of S. Craig Davis Surveying (Professional Land Surveyor, State of Missouri, No. 2357) as a surveying subconsultant who will meet or exceed standards set by the Land Survey Division of the Missouri Department of Natural Resources. MCE also has the resources of an in-house surveying department available to the City for this project. MCE and S. Craig Davis Surveying both offer significant experience with easement preparations and negotiations and are committed to providing City of Branson staff with all necessary information to complete necessary right-of-way negotiations.

ORGANIZATION OF PROJECT TEAM



VETERANS BRIDGE REHABILITATION PROJECT APPROACH

McClelland Consulting Engineers, Inc., has reviewed the documentation provided by the City of Branson as part of the Request for Proposal package including the historic plans and drawings, the underwater inspection report of May 2009, the 2009 biennial inspection report and the June 2011 structural evaluation report. After thoroughly considering this information, we have developed a preliminary project approach to accomplish the necessary repairs to Veterans Bridge. This approach will be modified to reflect input from City of Branson officials as needed. The priority of this approach is to provide the City of Branson with bridge repairs that meet both safety and aesthetic requirements in a cost-effective and timely manner. In executing this approach, considerations will be made to ensure that residents, motorists, tourists, businesses and other interested parties will be inconvenienced as little as possible during construction.

Veterans Bridge Project Understanding

1. The project is solely owned by the City of Branson which is responsible for its maintenance and the cost of such.
2. The bridge was built in 1931, and a sidewalk was added in 1959. Significant patching work was done in 1984.
3. Scope of work for the rehabilitation project includes:
    - Repair deck patches: two minor areas require repair
    - Repair deck girders delaminated areas: minor repairs required on a few girders per span
    - Repair end and intermediate bents deteriorated sections: deterioration is primarily on the cantilevers and bottom between columns; deterioration is more significant on intermediate tie beams
    - Seal the existing deck below the sidewalk
    - Replace the existing sidewalk with a new six foot sidewalk including new guardrail/barrier along the sidewalk: sidewalk overhang is in fair condition and needs significant repair.
    - Install new fencing along sidewalk at correct height including taller section over the MNA Railroad
    - Install new street lighting along west side of the bridge
4. Design work will include analysis of the existing structure to ensure that the existing girders have an adequate factor of safety to support the increased width of the new sidewalk, lighting and fencing.
5. The new sidewalk and all pedestrian access will be designed in accordance with ADA regulation.
6. Plans will be developed for the removal of the abandoned water line under the bridge. Ends of this line will be capped according to Utility Department requirements.
7. If work above the deck can be completed more expeditiously, complete bridge closure should be considered. Because complete closure may take place, design plans and specifications will include a plan for signage and closure. This plan is especially important due to the proximity of Veterans Bridge to the Skaggs Roundabout which links to the popular Branson Landing area. Efforts will also be undertaken to minimize impact of businesses located both north and south of Veterans Bridge.
8. Likely, a causeway will be needed to be constructed by the contractor to complete work under the bridge. Coordination for permitting requirements with jurisdictional agencies such as the US Army Corps of Engineers will be undertaken by the selected engineer. Details regarding navigation, requirements for passage of water and related details will be included on plans and specifications.
9. Aesthetic design elements, including new fence design, decorative concrete form liner and decorative street lights, will be specified to match the Branson Landing Boulevard Bridge style if it is at all cost feasible. If exact elements are cost prohibitive, efforts will be made to ensure that design elements coordinate as closely as possible. Lighting must match the Holophane fixtures on the BLB Bridge to minimize needs for parts storage, but the Veterans Bridge lamps will utilize LED technology. Lighting must meet bridge pavement illumination standards.
10. Coordination with the Missouri & Northern Arkansas Railroad will be necessary to obtain permits and determine details for any flagmen required. The contractor will be required to pay the railroad for the cost of the required flagmen, and the City will be responsible for the cost of any necessary permits.
11. Coordination with utilities located in the area will be necessary to locate such facilities which will be included on design plans.

Veterans Bridge Specific Project Approach

McClelland Consulting Engineers, Inc., is enthusiastically ready to provide professional engineering services to the City of Branson. We're located conveniently located less than two hours from the City of Branson and can competently deliver professional services quickly and effectively. MCE will utilize the following planned project approach to ensure that the Veterans Bridge project is well-designed and will be accomplished within the time frame and the cost parameters specified by the City of Branson.

When approaching new projects, we first identify any areas of scheduling that would hinder the flow of the production schedule. State and federal agency reviews sometimes require a lengthy and detailed permitting process. These guidelines require our engineers to be mindful of any and all projected "show stoppers" - development restrictions that would alter or prohibit a project. Being aware, ahead of time, of all possible set backs ensures a well-planned and effectively executed project.

As a multi-disciplined firm, MCE can carry your project from start to finish - this gives us an additional advantage in controlling the project schedule. Often times, because of our in-house capabilities, we can save time during the preliminary design process. In addition, the risk of misunderstanding a report completed by an outside consultant is greatly diminished. Also, the overwhelming majority of our staff has worked in both our construction materials testing laboratory and has served as construction observers for both large and small scale projects. This unique experience allows us to understand the intricacies that can sometimes "make or break" a project time line or budget.

Project Kickoff - Design team will meet with City of Branson officials to officially determine project scope. Following this meeting, Notice to Proceed will be issued.

Review & On-Site Evaluation - Upon receipt of Notice to Proceed, the MCE design team will further review the existing documentation, inspection reports, historical drawings and any other available data sets relevant to the Veterans Bridge Rehabiliation project. An on-site evaluation will be conducted during this phase by the design team to confirm and visually document findings of the June 2011 Bridge Engineering Assistance Program Report. During this visit, the team will also take note of any circumstances surrounding the site that may affect staging and construction including the Missouri and Northern Arkansas Railroad line. During this time, we will determine if wetlands will be an issue with this project, but based upon maps showing wetlands determination, this is not expected. The design team will also visit the BLB Bridge to visually document aspects such as fence design, decorative concrete form liner and decorative street lights to ensure rehabilitation measures for Veterans Bridge are designed with these aesthetics in mind. A summary report of these findings will be prepared which will include analysis of the existing girders to ascertain that an adequate factor of safety will exist with the installation of new wider sidewalks, fencing and lighting.

Design - Preliminary design plans for will be developed for the rehabilitation of Veterans Bridge based upon our review, on-site evaluation and subsequent summary report. We will meet with City of Branson staff at the 30% and 60% completion stages to ensure accord with the City's desires and to re-evaluate any budgetary considerations. At these meetings, we will also make adjustments as appropriate. We believe constant communication and coordination is the key to successful project completion. At 90% completion, documents will be submitted to the City for review. Any final changes will be made and 100% completion documents will be sent to the City for final approval. Throughout this phase, MCE will coordinate with the utility department, the Missouri and North Arkansas Railroad, the US Army Corp of Engineers and any other jurisdictional agencies to ensure that all regulations are met and all necessary permits are properly acquired.

Advertise for Bids - MCE will provide construction plans and specifications necessary to successfully bid, award and construct the Veterans Bridge Rehabilitation Project. We will utilize the "front end" documents preferred by the City of Branson. PDF files of the plans and specifications will be provided to the City of Branson for publication on the City's website, and our design team will be available to answer questions from contractors during the bidding phase. We will also serve as a source for plans and specifications for bidders.

Construction - After bids are opened and the lowest qualified responsive bidder is approved by the City of Branson and a contract is agreed upon by the City of Branson and the selected contractor, City of Branson staff will handle daily contract administration, inspection and pay requests as stated in the RFP package. (MCE is also available to provide these services should the City decide assistance is necessary.) During this phase, the MCE design team will be available to answer questions, approve shop drawings, lend technical support throughout the

project and most importantly, we will be available to meet on-site should any unanticipated problems or issues arise. MCE will also make periodic site visits to observe work in progress to provide an additional level of quality control.

Project Completion - Upon completion of construction, MCE will conduct a field review of all work completed by the contractor and advise the City of Branson if the Veterans Bridge Rehabilitation project was built in substation conformance to construction documents and to the design intent. When the City accepts the project, MCE will provide as-built drawings in PDF format to the City of Branson.

Warranty Inspection - One year from the completion date, MCE will conduct a warranty inspection to ensure that any warranty issues are identified in advance of the deadline. Should any warranty issues arise, MCE will assist the City is obtaining correction to these issues to assure that the Veterans Bridge Rehabilitation project will meet the City of Branson's satisfaction and can continue to serve as a major access point for the downtown area.

Throughout the Veterans Bridge Rehabilitation project, quality control and quality assurance will be of the utmost concern to the MCE design team. We know a quality design looks good only on paper unless it is constructed with the same quality assurances. There are some instances where a contractor will attempt to cut his costs by way of short-cuts and other low quality practices. MCE has established a stringent quality control and quality assurance (QC/QA) program to ensure your project is constructed with the same quality it was designed. We offer several in-house advantages that compliment this QC/QA program.

- Staff experts who deal with soil and groundwater conditions, which are key factors when considering pavement design construction.
- An experienced in-house construction materials testing laboratory which administers tests required for a good quality control campaign.
- Three Registered Professional Land Surveyors experienced in utilizing the latest in electronic data collection to provide construction control.

PROJECT SCHEDULE

Project Kick Off Meeting

Notice to Proceed (NTP) Issued

Preliminary Review & On-Site Evaluation.....1.5 Months after NTP

Submit Summary Report of Findings.....1.5 Months after NTP

Meet with City at 30% Design Completion.....2.5 Months after NTP

Meet with City at 60% Design Completion.....4 Months after NTP

Submit 90% Drawings to City for Review and Approval.....5 Months after NTP

Submit 100% Drawings to Owner for Review and Approval.....5.5 Months after NTP

Advertise for Bids.....6 Months after NTP

Open Bids.....7 Months after NTP

Approve of Low Bid by Owner.....7.5 Months after NTP

Pre-Construction Meeting & Issue Notice to Proceed.....8 Months after NTP

Construction Complete.....12 Months after NTP

1-Year Warranty Inspection.....2 Years after NTP

Relevant Project Experience

McClelland Consulting Engineers, Inc., designs vehicular bridges and all transportation related infrastructure projects while keeping safety and durability in mind.

All bridges designed by McClelland Consulting Engineers, Inc., are subjected to careful quality assurance reviews, during both design and construction. Vehicular bridges are designed according to American Association of State Highway and Transportation Officials (AASHTO) criteria and all pedestrian access and sidewalks associated with such bridges are designed in accordance to the Americans with Disabilities Act.

In addition to our in-house capability of providing complete bridge design services, MCE has partnered with other engineering firms in their design of major U.S. Highway bridges assisting with geotechnical explorations, materials testing and the formulation of foundation recommendations. To best serve the City of Branson and to ensure the utmost in safety and quality control/quality assurance, we have enlisted the services of James Beatty, PE, a bridge engineering design specialist who has 17 years experience serving the Arkansas Highway and Transportation Department Bridge Division.

Lake Maumelle Intake Access Bridge
MCE designed the access bridge to the pump station platform at Lake Maumelle. The bridge is a two span, 180 linear feet structure designed for heavy truck traffic. Construction was completed in 2004.

Lake Maumelle Intake Access Bridge

UA Lot 56 Parking Access Bridge
MCE provided services for this two span, 50 linear foot bridge was designed as part of the University of Arkansas' overall Sixth Street Parking Project. The bridge is wide enough to serve the UA Transit buses.

Lot 56 Parking Access Bridge

Fourche Creek Bridge Additions

MCE provided services for the Fourche Creek Bridge additions including 36th Street (124 linear feet) using 31-foot precast bridge units; John Barrow Bridge (60 linear feet) using cast-in-place concrete bridge deck; and Rodney Parham Bridge (60 linear feet) using cast-in-place concrete bridge deck.


Fourche Creek Bridge

Statehouse Convention Center Main Street Bridge

MCE provided designs for removal and relocation of the south-bound ramp of the Main Street Bridge and redesign of its approach; grading and utilities relocation were also part of this project connected to the expansion of the Little Rock Statehouse Convention Center.


Statehouse Convention Center Main Street Bridge

Little Rock Bridge Rehabilitation

While employed with ICE, Inc., as a structural engineer, Mr. Beatty performed design and preparation of details for repair and rehabilitation of five bridge structures for the city of Little Rock, Arkansas along with choosing the appropriate materials to be used for the repairs. The 14th Street Bridge over the Union Pacific Railroad is located just west of historic Central High School in Little Rock and is one of the main routes to the school. Bridge is a reinforced concrete structure which was exhibiting major deterioration. Large concrete spalls had developed in the substructure and superstructure exposing the reinforcing steel which had also begun to deteriorate. Repairs required removal of rusted reinforcing steel and replacing with new steel as well as repairing the spalls with epoxy concrete to provide both strength and durability.

The other four bridges in the project (28th Street over Coleman Creek, Bowman Road over Brodie Creek, Bowman Road over Panther Creek and Reservoir Road over Grassy Flat Creek) were precast concrete spans with reinforced concrete substructures which were beginning to crack and spall. Scope of work included details and material selection for repair of damaged concrete, plus upgrading bridge approach guard rails and bridge railing.

Jefferson Street Bridge over Union Pacific Railroad Van Buren, Arkansas

Mr. Beatty provided engineering services for the Jefferson Street Bridge over Union Pacific Railroad in Van Buren, Ark. The bridge is a 742 foot bridge with a steel beam/concrete deck superstructure with a reinforced concrete substructure that is the primary truck route to one of Van Buren's major employers. Bridge inspection by the Arkansas Highway and Transportation Department found structural deficiencies severe enough to recommend closing of the bridge until repairs could be made. The major problem was exterior girders on a span over an access road below had suffered collision damage resulting in cracked and bent steel beams. Our scope of work included designing and detailing the repairs to be made to the steel girders to restore capacity and re-open the bridge to truck traffic. Of lesser concern, but still necessary, severely deteriorated bridge bearings were replaced and deteriorated ends of beams were repaired while the bridge was closed for the major repairs.

HORNER & SHIFRIN, INC.
ENGINEERS

4166 W. KEARNEY STREET
SPRINGFIELD, MISSOURI 65803-9509
417-865-7000 • FAX 417-865-7003
www.HornerShifrin.com

August 23, 2011

Mr. Keith Francis, P.E.
Assistant Director of Public Works
City of Branson
110 West Maddux, Suite 310
Branson, Missouri 65616

Subject: Statement of Qualifications to Provide Professional Engineering Services for the Repair of the Veteran's Boulevard Bridge

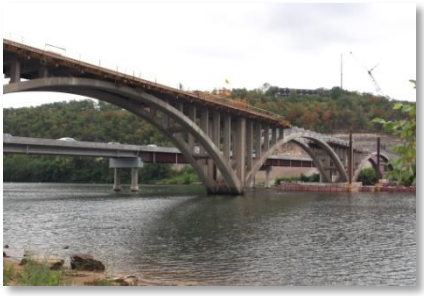
Dear Mr. Francis:

Thank you for the opportunity to present our qualifications to the City of Branson for the repair of the Veteran's Boulevard Bridge. Horner & Shifrin will team with Gray & Associates and Palmerton & Parrish, both located in Springfield, to bolster our resources and deliver a successful project. Gray & Associates will provide surveying services and Palmerton & Parish will provide inspection testing and geotechnical engineering services when necessary. We have previously worked with the City of Branson and the Missouri Department of Transportation (MoDOT) on similar projects and believe this proposal will demonstrate our capabilities and expertise in repair and design of bridges.

HISTORY OF RELATED PROJECTS

From box culverts to large structures spanning interstate highways, the Horner & Shifrin (H&S) team has provided engineering services for numerous counties and municipal clients. We have worked extensively with MoDOT, and our expertise is evident by our regular selection by the MoDOT Bridge Office to design bridges for the state. As the RFP stated the Veteran's Boulevard bridge is a major point of access into downtown Branson and accommodates a large daily volume of traffic. We are thoroughly familiar this type of situation from our experience in Branson on the Route 76 over White River and U.S. Route 65 over White River bridges presented below along with more examples that emphasize our knowledge of bridge design, evaluation, rehabilitation and replacement.

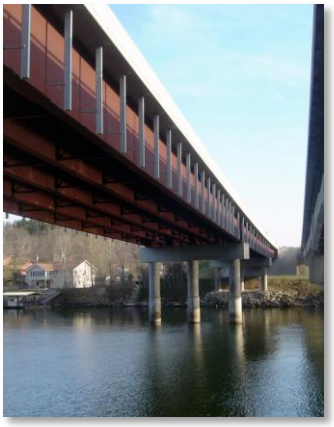
Route 76 Over White River, MoDOT | Bridge Division
A 1087-ft long bridge, constructed in 1931 had a severely deteriorated deck in need of replacement. The bridge carries 18,000 vehicles per day in Branson, MO and therefore required accelerated construction to minimize impact to the traveling public.



Horner & Shifrin evaluated several options to find the best solution. Precast concrete members were selected to minimize project time and cost. Precast spandrel beams were connected to existing spandrel column steel using a grouted connection. Specially designed precast deck panels were used as stay-in-place form work for the cast-in-place portion of the slab.

Because of the complexity of the structure, a finite element model including temperature, wind and construction loads was used to ensure the stability in the remaining arch rings and spandrel columns during all stages of construction. Concrete strength testing was completed by Palmerton & Parrish so the material strength could be accurately represented in the model. An open-style concrete barrier was selected to reflect the architectural history of the existing structure.

U.S. Route 65 Over White River, MoDOT | Bridge Division
U.S. Route 65 travels through five states, but it is at one of its busiest points when it passes over Missouri's White River at Lake Taneycomo in Branson, MO. Horner & Shifrin provided final design services for northbound U.S. Route 65 over White River for MoDOT. This four-span, 823-ft long superstructure consists of 108-inch deep continuous composite plate girders with a maximum span of 230 feet. Intermediate concrete bents are founded on 54-inch diameter drilled shafts. The expansion end bents are founded on steel bearing H-piles, and feature detached wingwalls and deadman anchorage systems.



Additional elements of the project included development of a marine traffic control plan and a girder delivery study due to limited site access. Construction of the center bent in the middle of the river was specified to be completed by barge rather than by causeway due to heavy recreational boat traffic, variable water levels, and U.S. Army Corps of Engineers' requirements to minimize river impact. The drilled shafts for this bent required both permanent and temporary casings in order to allow for placement in the water while providing a final exposed concrete finish above the water line.

This project received very high ratings from MoDOT, with 11 out of 12 categories scoring a 5, which is the highest rating, with the remaining category scoring a 4 rating**.** MoDOT commented, "Horner & Shifrin worked well with us to complete good quality final plans for this project under tight deadlines."

Poplar Street Bridge Approach Rehabilitation, MoDOT | St. Louis District
Horner & Shifrin provided engineering services in the form of bridge inspection and design for the rehabilitation of the slab for the double-deck Poplar Street bridge on I-64 from approximately 21st Street to the Mississippi River. The structure is approximately 8,000 feet long and crosses many city streets, rail lines and MetroLink.

The project included deck inspection using infrared thermography and ground penetrating radar to determine areas of delamination supplemented with visual inspection of the underside of the deck and expansion joints. A Chain Drag Test was conducted to determine the accuracy of the non-destructive test methods. The goal of the project was to extend the lifespan of the existing bridge decks. After all information was gathered, H&S examined several repair recommendations that were prioritized based on budget, existing structure condition, anticipated life of structural components, and traffic control during construction. Many of the finger plate expansion devices were approaching or are at the end of their useable life and were replaced.

Miscellaneous Bridge Repairs – MoDOT | St. Louis District
MoDOT has selected Horner & Shifrin to serve as an on-call consultant for structural emergency and maintenance repair items in the St. Louis District. Projects include expansion joint replacement, bearing replacements, zoned slab repair, deck repairs, substructure repairs, girder repairs, retaining walls and other similar work. MoDOT has traditionally performed this duty with their own engineers, but due to fewer resources have looked at other options. This work requires a vast range of knowledge on a variety of bridge types, the ability to work quickly yet accurately and effective communication with maintenance personnel. MoDOT selecting H&S for this very important task displays their trust and confidence that we can provide this critical service to ensure public safety.

Various Projects, City of Ladue, MO
Horner & Shifrin has provided engineering services to the City of Ladue for various bridge and roadway projects. We provided inspection of eight city-owned bridges to assist the City in their long-term plan for maintenance and replacement of their bridge inventory. A structural analysis of superstructure, substructure, and hydraulic study of existing channel conditions was included. Separate reports were prepared to discuss conditions of each bridge as well as offer estimated costs for bridge replacement. We also provided deck replacements on the bridges at Conway Road at Bennington and Conway Road at Stonehenge and provided replacements of the Litzsinger Road over Deer Creek, Warson Road over Deer Creek, and Clayton Road over Deer Creek bridges. In addition, we provided roadway design and construction oversight for the improvements to Warson Road for the City. The improvements included mill and overlay of 1.8 miles of two-lane roadway, new concrete curbs, drainage improvements including new storm sewers and water quality Best Management Practices (BMP), and other associated roadway work.

Missouri Department of Transportation Bridge Engineering Assistance Program (BEAP)
Horner & Shifrin is an approved consultant for the BEAP, sponsored by MoDOT and FHWA, for 2011-2014. The program provides local communities with structural engineering assistance at no cost to them to evaluate problems on existing bridges. Evaluations include structural and hydraulic analysis, load rating, load testing, repair design, cost estimates for replacement bridges, and similar small tasks.

Grand Glaize Bridge over Grand Glaize Creek – Metropolitan St. Louis Sewer District (MSD)
Horner & Shifrin was selected to inspect the bridge at the entrance to MSD's Grand Glaize Waste Water Treatment Plant. The current condition of the bridge was assessed and was found to be in very good condition. We recommended a few minor repairs as preventative maintenance to improve the remaining service life of the bridge. We subsequently designed the repairs and prepared construction plans.

Adelaide Bridge Over Various Streets and Railroads – MoDOT | Bridge Division
Horner & Shifrin was selected to design the superstructure replacement of an existing seventeen span bridge in St. Louis, MO. The structure spans a number of rail lines and city streets. Traffic on the existing structure was limited to interior girders with traffic control barrels blocking the shoulders. This project included all new steel girders and concrete slab including substructure repairs. One end span features a widened roadway and a parallel roadway runs underneath the existing bridge. The entire structure is approximately 1,550 feet long. The existing bridge had signs of fatigue cracking and the replacement structure was designed for fatigue loads. Unique challenges included the presence of multiple power lines both parallel to and under the structure, as well as several abandoned and deteriorating buildings within five feet of the structure.

Charter Church Road Bridge – Jefferson County Public Works Department
Horner & Shifrin is designing a replacement deck and new steel girders for the Charter Church Road Bridge in Jefferson County, MO. The structure is a three-span, 120-ft long steel girder bridge also requiring minor substructure repair. This project also includes roadway design.

2005 – 2010 Fracture Critical Inspection Program – MoDOT
Horner & Shifrin is performed a fracture critical bridge inspection program statewide for MoDOT. Inspections and reports were completed for 11 off-system bridges in Bates, Clark, Crawford, Franklin, Pulaski, St. Louis Counties, and the City of St. Louis.

BRIDGE RECORD OF PERFORMANCE

Project/Client	Estimated vs. Actual Construction Cost	References
Route 76 over White River MoDOT	Estimated: $4,500,000 Actual: $4,800,000	Mr. Chad Zickefoose, P.E. Transportation Project Manager 417-895-7638
U.S. Route 65 over White River MoDOT	Estimated: $4,723,081 Final: N/A	Ms. Joyce Foster, P.E. Structural Liaison Engineer 573-751-3707
Poplar Street Bridge Approach Rehabilitation MoDOT	Estimated: $20,900,000 Actual: $14,800,000	Mr. Bob Gummersheimer, P.E. Transportation Project Manager 314-453-5068
Miscellaneous Bridge Repairs MoDOT	Estimated: N/A Actual: N/A	Mr. Kurt Gribble, P.E. Structural Liaison Engineer 573-526-0248
Various Projects City of Ladue, MO	Estimated: Actual:	Mr. Dennis Bible Public Works Director 314-993-5665
Grand Glaize Bridge over Grand Glaize Creek MSD	Estimated: $60,000 Actual: $75,000	Mr. Terry Forster, P.E. Senior Civil Engineer 314-768-2783
Adelaide Bridge MoDOT	Estimated: $9,100,000 Final: $6,091,000 (Bridge Only)	Mr. Bob Gummersheimer, P.E. Transportation Project Manager 314-453-5068
Charter Church Road Bridge Jefferson County Department of Public Works	Estimated: N/A Final: On-going	Mr. Steve Oldham, P.E. Deputy Director 636-797-5340
Fracture Critical Inspection Program MoDOT	Estimated: N/A Final: N/A	Mr. David Koenig, P.E. Structural Services Engineer 573-526-0556

Our firm not only competes with but wins out over much larger national firms for MoDOT bridge projects. Following are excerpts from four of our most recent consultant performance evaluation forms completed by MoDOT Bridge Office personnel for H&S designed projects:

- Route 76 over Lake Taneycomo – Open Spandrel Arch Structure, Rec'd. Nov. 19, 2009.
  4.7 out of 5.0 rating. Evaluator: Joyce Foster. Notable quote: **"Horner & Shifrin submitted quality plans for this unique partial superstructure replacement of an open spandrel arch."**
- Adelaide Bridge – 1500' Long Plate Girder Superstructure Replacement, Rec'd. Dec. 28, 2010.
  4.8 out of 5.0 rating. Evaluator: Greg Sunde. Notable quote: **"The expertise, flexibility, speed and professionalism with which H&S handled the issues that came up during design and construction were a big reason for the success of the project."**
- Route CC over S. Fork of N. River – Single Span P/S Conc. Girder Bridge, Rec'd. Dec. 2, 2010.
  4.8 out of 5.0 rating. Evaluator: Paul Porter. Notable quote: **"Horner & Shifrin demonstrated a good knowledge of the options available for the project and MoDOT's desire to pursue Practical Design. They have coordinated very well with all MoDOT personnel assigned to the project (both in the District and Central Office), and have been very thorough to follow up on and properly document the project issues."**
- SB Route 63 over Turkey Creek and Route H Overpass – Rec'd. May 5, 2010.
  4.9 out of 5.0 rating. Evaluator: Paul Porter. Notable quote: **"The final bridge plans submitted for our review were of high quality with very little in the way of review comments or suggested changes from MoDOT staff. This speaks well of the consultant's internal QA/QC efforts and is remarkable when you consider the extremely tight deadline where they were basically asked to take on all the necessary steps for the entire design process from beginning to end for these structures and complete everything in 2 months to meet the schedule for 100% unsigned/unsealed plans on April 1, 2010."**

NAME, NUMBER AND QUALIFICATIONS OF INDIVIDUALS OF THE FIRM

Horner & Shifrin has a large group of knowledgeable employees who are fully qualified to do the work required for this project. As a firm with 73 employee-owners, including 13 structural engineers, we have more than adequate capacity to deliver this project for the City of Branson. We will assign a team of highly competent employee-owners who have worked together on many successful projects.

Kevin Skibiski, P.E., S.E., P.L.S., Project Manager – I am an associate vice president of the firm and manager of our Springfield, MO, office, from which this project will be managed. I have over 30 years of experience providing engineering services in southwest Missouri and am thoroughly familiar with Branson and the surrounding area. My project management experience includes the St. James Street bridge replacement in Hollister, MO, a new bridge for the Village of Saddlebrooke, MO and the Neighborhoods at TigerPlace pedestrian bridge.

Thomas Lohman, P.E., S.E., Assistant Project Manager | Bridge Rehabilitation – As a former senior structural engineer with MoDOT, Tom has over 14 years of experience, 10 of which were with MoDOT, and he is thoroughly familiar with MoDOT standards and procedures for bridge design, bridge hydraulics and scour analyses. Tom's experience includes the Route 76 over White River, Popular Street Bridge Approach Rehabilitation project and Adelaide Bridge Replacement. He is also the project manager for our on-call consultant contract with MoDOT and is a member of the International Concrete Repair Institute.

Ramin D. Ashrafzadeh, P.E., Assistant Project Manager | Roadway, Traffic Control Plans and Boat Traffic Control Plans – Ramin has over 14 years of experience in experience in roadway design and hydraulics related to bridge replacement projects. Recent roles include project engineer responsible for bridge hydraulics and roadway design for both the Groby Road and Canton Avenue Bridge replacements for the City of University City, MO. He has also played a significant role in the bridge replacement programs for the Jefferson County, Franklin County and City of Manchester.

Jonathan J. Derner, P.E., S.E., Project Engineer – Jon is a senior project engineer in our structural engineering with ten years of experience in bridge design. Jon's responsibilities include load factor design (LFD) and load and resistance factor design (LRFD), including seismic, and preparation of construction documents. Jon played a significant role in the Route 76 over the White River and Adelaide Bridge projects both for MoDOT.

Carrie Beth Wright, E.I., Project Engineer – Carrie Beth is a structural engineer with experience in structural analysis and design. Her experience includes Popular Street Bridge Approach Rehabilitation project, Adelaide Bridge Replacement, Route CC over Sharpsburg Branch, Route 63 bridges all for MoDOT and the Charter Church Road Bridge Replacement for Jefferson County.

John E. Klein, P.E., Project Engineer – John is a civil engineer skilled in transportation engineering including Phase I preliminary engineering studies, Phase II design, intersection design studies (IDS), bridge layout, hydraulic analysis and design, plan preparation, geometric improvements, drainage/MSD and ADA compliance. His 11 years of experience include The New I-64 Design/Build Project, Segment 1 for MoDOT, Goodfellow and Skinker Boulevards for the City of St. Louis, Board of Public Service, MO and the Salt River Road Extension for the City of St. Peters, MO

Keith S. Smith, P.E., Electrical Engineer – Keith an electrical engineering with 20 years of experience. Keith has provided pedestrian, highway and roadway lighting design for numerous projects, including Grand Avenue Streetscape, South Grand Great Streets Initiative and Olive Boulevard Streetscape.

David P. Cavender, P.E., Wetland Determination and Mitigation – Dave is an Environmental Engineering Senior Project Manager with over 20 years of experience. He has a unique background in both engineering and earth science that prepares him to deal with wetland issues arising in relation to various engineering projects ranging from a landfill to stormwater rain gardens. He has performed wetland delineations according to the procedures in the U.S. Army Corps of Engineers Wetland Delineation Manual and is a Certified Professional Soil Scientist. He has established relationships with MoDNR and the Corps of Engineers Little Rock District wetland staff including those in the Branson field office.

Gray & Associates – Gray & Associates will provide surveying services. They are a consulting firm located in Springfield, MO that has been in business since 2007 and offer many professional surveying services. Their experience includes providing surveying services for all of the City Utilities of Springfield on major projects over the last 20 years. They have two licensed surveyors on staff and two survey crews. The firm personnel are competent with the use of equipment dedicated to the profession of surveying.

Palmerton & Parrish, Inc. – Palmerton & Parrish, Inc. will complete inspection testing and geotechnical engineering services when necessary. They have significant experience with materials testing projects of all sizes. Their materials testing staff includes about 20 full-time field technicians and three full-time laboratory personnel. Projects originating from our Branson Office are overseen by our Branson Laboratory Manager, Mike Andress. Fred Palmerton, P.E. or Brad R. Parrish, P.E. most typically acts as the reviewing engineer for Branson projects. They also provided services related to analysis and evaluation of existing pavements (asphalt and concrete) as well as reinforced concrete structures using largely NDT (Non-Destructive Testing) techniques. Palmerton & Parrish owns and operates several equipment items that, to the best of their knowledge, are only available locally at a private commercial laboratory through their office. These include:

- Windsor Probe apparatus used for non-destructive testing of hardened concrete.
- Ground-penetrating radar (GPR) used for non-destructive determination of depth and location of reinforcing steel embedded in concrete.
- Corrosion potential of embedded reinforcing steel using a Copper Sulfate half cell (ASTM C-876)
- Measurements of Delaminations in concrete bridge decks by sounding (Chain Drag Method, ASTM D-4580).
- Chloride ion test of aggregates for corrosion potential.

Michael Banashek, P.E., S.E., QA/QC Review – Mike is the Manager of Structural Engineering and will perform QA/QC reviews. His 20 years of bridge design experience include serving as Structural Project Manager for the New I-64 Design/Build Project and the Salt River Road Extension, serving as QA/QC review for the Poplar Street Bridge Approach Rehabilitation project and serving as Project Manager for the Route 76 over the White River, U.S. 65 over the White River, Route 63 Bridges, and, Route B over Aux Vases River, and serving as Structural Engineer for the Adelaide Bridge.

GEOGRAPHIC LOCATION OF PRINCIPAL OFFICES

Horner & Shifrin has offices in Springfield and St. Louis, MO, and in O'Fallon, IL. Your project will be managed from our Springfield location.

PROPOSED SCHEDULE

Below is a suggested schedule that allows sufficient time to complete construction in 2012. The schedule could be accelerated if necessary.

Project Schedule (Assume NTP = Oct. 15, 2011)	2011			2012			
	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Survey & Inspection							
Structural Analysis							
Preliminary Plans (50%)			R				
Right-of-Way Plans					R		
R / W & Easement Acquisition							
Final Plans (100%)							R

R = Review by City

PROJECT APPROACH

Inspection & Survey
The existing 462'-6", 9-span concrete deck girder bridge, built in 1931, has been rehabilitated twice, first in 1959 when a sidewalk was added and again in 1984 when a low slump concrete wearing surface and guardrail were constructed. The bridge was transferred from MoDOT to Branson in 2004. The main known structural issues with the bridge are substructure spalls and deterioration of the sidewalk.

While the BEAP study lays the foundation for this project, it is imperative that more investigation of the condition of the existing structure is completed in order to be certain that all deficiencies are repaired and to better estimate plan quantities for repair items which are typically a source for project overruns. There are also areas of the deck and girders that need repair and the deck should, at a minimum, be sealed.

The low slump concrete wearing surface is 27 years old and appears to be in good condition based on a visual inspection, but its age indicates it is nearing the end of its life. While not specifically identified in the RFP it would be a good idea to further test the deck to determine if the overlay will remain in good condition for several more years. At a minimum, we propose completing a chain drag test to identify delaminated areas of the slab and chloride testing of powder samples from the slab to determine chloride levels that can be correlated to the likelihood of rebar corrosion. Ground penetrating radar, coring, and half-cell potential testing could be utilized if the preliminary testing results indicate these tests would provide additional information. These tests will help verify the condition of the deck. If the deck is in good condition, then only routine maintenance is necessary. If there are problems detected, then more deck repairs will be warranted, whether partial or full depth repairs or construction of a new overlay. High chlorides would result in more extensive repairs. We would consider electrochemical chloride extraction techniques to remove chlorides in lieu of repairs. We have experience in material selection for bridge overlays on our recently completed Poplar Street Bridge Approach project for MoDOT. The PSB Approach project required considerable investigation of overlay systems used throughout the country to locate the best material for that project and makes us well equipped to select the right materials for your project, if required. Tom Lohman has volunteered to share this knowledge at the 2012 TEAM Conference.

Some of the spans have moved laterally; this is likely related to the large structure skew. Though not mentioned in the RFP, it would be a good idea to investigate the feasibility of resetting the girders and devising a method to prevent future lateral movement.

The existing bridge was built as simple spans, so an expansion joint exists between each span. The joints are generally in good condition, but have failed locally where there is lateral movement. Expansion joints should be replaced only as necessary based on condition or where the sidewalk is replaced. Resetting girders would ensure that expansion joints remain in good condition in the future.

We are aware through conversations with MoDOT construction inspectors that the quality of concrete in the Route 76 Bridge, built at the same time as this bridge, was found to be generally very strong and in excellent condition during construction of the rehabilitation project, and the expectation is that aside from where water and salt have imparted damage, the existing concrete will be similar to that found in the Route 76 Bridge.

A detailed survey will also be required because existing plans, even those marked as-built cannot be trusted to be accurate. Minimal additional survey effort during design can save a lot of time and money during construction.

Sidewalk, ADA & Aesthetics

The existing sidewalk is 3’10” wide and has some deterioration. This project would replace the sidewalk with a new 6’ sidewalk and tie-in to the sidewalk off the bridge. This will necessitate a structural analysis to ensure the existing bridge can handle the additional load. Adjacent guardrail and fence would be replaced along with the lighting.

An analysis of the existing structure will be necessary to determine if the structure can support a new, wider sidewalk. If the structure is found to be deficient, we will investigate ways to improve the structural capacity. One option to accomplish this is to complete Windsor probe testing to determine the actual insitu strength of the concrete. This method was used with great success on the Route 76 Arch Bridge project in downtown Branson. Testing of the arch bridge concrete resulted in design strength of 7 ksi, which was much greater than the 3 ksi originally assumed and resulted in avoidance of unnecessary and costly strengthening measures. If there are still issues with the capacity of the structure with the insitu concrete strength, we would investigate methods to strengthen the bridge, including use of fiber fabric materials. Our intention is that the sidewalk would be supported on the existing bridge and foundations and would avoid any new substructure units; however if new substructure units would be required, our team would complete the necessary geotechnical work. The worst-case sidewalk scenario would be a separate pedestrian bridge, most likely 3 spans, but this would be a last resort due to higher cost.

We will thoroughly investigate the use of architectural elements to mimic the Branson Landing Blvd including decorative fencing, decorative light poles and the use of form liner. Bridge downstream of this structure and will work closely with the City to determine which of these may apply to make sense for this project. Lighting will be a specific issue that will need careful consideration. LED lights may require closer spacing of lights and are more expensive than HID lights, as much as double. Though LED lights last longer, they are more expensive to replace. We have the necessary knowledge to share with the City so an informed decision on which way to go with lighting can be made. The enhanced fence and barrier curb details can be used with the only issue being cost. If cost is a concern, we recommend that the project be let with architectural details as an add-alternate item; that is, the City can award construction of the architectural details only if they are satisfied with the price. We have successfully used this process on a similar situation for the City of St. Peters, MO where they wanted to build the trail portion of a project only if it was within their budget.

We see no problems meeting ADA requirements on this project.

Right-of-way & Constructability
There is limited right-of-way surrounding the bridge. This could be an issue with the proposed wider sidewalks and could affect construction staging areas. We would provide all survey work necessary for the City to acquire right-of-way or temporary construction easements.

Access to the site for construction is fairly good. There is a staging area near the Skaggs roundabout on the North side of the bridge. Access from the Northeast side of the bridge would not require any construction easements since the City owns the property, but easements may need to be acquired near the marina on the Northwest side. Access to the intermediate bents for concrete repairs may be difficult. A causeway may create some environmental concerns and access for barges launched from public ramps may be difficult, however it may be possible to negotiate launching of the barges from the private marina ramp, failing that, barges could be launched by crane on the East side of the bridge. Barges would be preferred to causeways due to reduced environmental impact. This issue will be investigated during design and appropriate language included in the job special provisions to guide the contractor. Construction could easily be completed in one construction season and we would explore ways to accelerate the project by suggesting optimal sequencing of work or providing strict contractor deadlines or incentives for early completion of work as part of the specifications.

H&S has found constructability reviews involving design and construction personnel at key stages of project design to be a very successful tool on complicated projects. It is important that construction inspectors provide input on the plans and job special provisions that they will need to enforce. Our experience is that involving construction inspection personnel early in the design process yields a better construction experience for all parties – owner, engineer and contractor.

Traffic Control & Affected Properties

The bridge sees over 12,000 cars a day, so its closure during construction would have a significant impact on the community. There are also businesses at both ends of the bridge that would be affected during construction. The detour is short via Branson Landing Blvd., but given the typical traffic congestion in the area, a short detour is still a noteworthy problem.

The preferred traffic control alternative to facilitate construction and minimize cost is to completely close the bridge during construction. While not desired for the traveling public, with proper signage and an information campaign full closure can be successfully implemented as shown on the nearby Route 76 Bridge rehabilitation. Another option to consider is constructing the structure in stages, though only one lane would be available for traffic. The use of temporary signals would be required with this option, however a signal would most likely cause queuing to extend into the nearby roundabout causing major traffic problems in other areas. A more likely alternate scenario would be to utilize one-way traffic on the bridge during staged construction. Regardless of the traffic control scheme, it will be necessary to maintain access to the neighboring properties and early discussions should take place with the property owners, either by H&S or by the City, to gain property owner support.

The marina would be further affected by restrictions in the channel and boat traffic control plans would be necessary to ensure that the main channel remains accessible. H&S has provided boat traffic control plans for construction of the Route 65 Bridge over Lake Taneycomo and is familiar with the plans used for construction of the Route 76 Bridge.

Limits on working hours would also be appropriate due to the proximity to hotel rooms, but would need to be balanced with the City's desire to finish construction quickly.

Environmental Impacts
The area may be in a wetlands area and mitigation may be required. The City has reviewed this issue and thinks wetlands are not an issue; however, we will review the site to ensure that is the case. We are aware that the site at the Branson Landing Blvd just downstream is in a wetland, as is a site ¼ mile upstream. Water quality and needs for a 404/401 permit and floodplain development permit will also be considered during design.
The site is in a FEMA designated floodplain so a floodplain development permit would be required if there is any construction within the floodplain, though it is possible that all construction would be above the floodplain. A no-rise certificate is not required since the site is not in a FEMA designated floodway.

Utilities

Utilities exist on the bridge and need to be accommodated throughout construction; there is an abandoned water line that should be removed and capped. The bridge crosses both Roark Creek and Missouri & Northern Arkansas Railroad (MNA) (leased from Union Pacific). Close and early coordination with MNA and UP will be necessary to ensure that contract documents meet their requirements including adequate pedestrian fence height, provisions for the contractor to ensure safety and to minimize rail line down time. We worked with Ken Bush of MNA on the Route 76 Bridge and believe our relationship will be an asset for this project.

Cost Estimation

Although rehabilitation projects are notoriously difficult to predict, H&S takes pride in the ability to accurately estimate costs on these types of projects. This not only helps owners set budgets, but also helps to prevent costly overruns. Accurate quantity estimation is a key component of cost estimation, so we will thoroughly review and confirm the quantities listed in the BEAP study. We have experience in estimating two extremely complicated bridge rehabilitation projects for MoDOT. The Route 76 Arch Bridge in Branson was the first of its kind to be rehabilitated by MoDOT, so there was no bid history to use as a basis. We expended great effort in talking with contractors, looking to other DOT's and using our experienced judgment to best estimate the construction cost and our final estimate was in line with the winning contractor. On another bridge project for MoDOT in St. Louis, we needed to estimate construction costs for a concrete overlay project for the Poplar Street Bridge Approach, twin bridges that are 8000' long (the longest in the state), which included 37 expansion joint replacements and complex traffic control and construction restrictions, we were able to compress what was envisioned as a $30 million, two-year project by MoDOT planners into a $15 million, 1 year project thru extensive investigation of materials, construction methods and traffic control planning.

Construction Assistance

Horner & Shifrin takes pride in being there for our clients from beginning of a project until the project is accepted by the owner, whether we are performing construction administration or just providing engineering support during construction as we would on this project. Time and again, we have been complimented by MoDOT inspectors for our quick responses to issues that inevitably arise on projects, including on the Route 76 Bridge. We understand that time is money and quick responses can help to keep construction projects moving.

Construction Quality

Repair work takes time to construct properly. It is important the right balance is found between speed and quality. Careful development of job special provisions is key to insuring that the job is done right. H&S recently dealt with this issue on the aforementioned PSB Approach project, by working with assigned construction inspectors, discussing with contractors and industry experts we were able to provide job special provisions that allowed the contractor to accelerate work while ensuring quality was maintained. This included helping to re-write MoDOT's standard Job Special Provision for hydro-demolition of bridge slabs.

Project Communication

We will have regular project team meetings to discuss issues and include the City in all key correspondence and decisions. Files will be shared between our Springfield and St. Louis Offices through a shared network drive, and with our teammates and the City via our ftp site. We are aware of the area's Partners in Progress and are willing to attend anytime the City would find it beneficial. We also have a marketing department that can assist in any public information campaigns at the City's direction.

Deliverables

We will provide calculations, plans, specifications, engineer's estimate and complete the steps necessary to advertise, bid and award the project. Construction inspection will be completed by the City, but we will provide engineering support during construction and complete as-built plans.

Horner & Shifrin is the right size firm for this project. We are small enough to provide the personal touch that makes projects successful and large enough to have the technical expertise required of these complicated projects. Our team members, Palmerton & Parrish and Gray & Associates, will provide necessary field services to complement our firm's areas of expertise.

It should be stressed that rehabilitation work is very different and much more complicated than design of new structures and requires specialized knowledge and skills. Horner & Shifrin has the necessary knowledge and has earned the trust of MoDOT as evidenced by their selection of us for the two most significant repair projects (Route 76 and PSB Approach) they have advertised over the last four years and further by our selection as one of only two consultants they have entrusted to complete maintenance repairs on bridges in the St. Louis District.

We want to assure you that although our proposal has raised some possible significant additional scope of work, we are committed to recommending to you only the repairs that are deemed necessary in our professional judgment and will of course discuss all-important issues with the City. We treat each project as though it is our money being spent and look for the best value for each dollar spent, in both construction and engineering. Lastly, we have a long history of completing projects on time and under budget no matter how simple or complex. You can rest assured that we are the right team for this job and can complete your project as shown below.

We thank you for your consideration of our team and look forward to working with you on this challenging project. If you have any questions or would like additional information, please contact me at 417-865-7000 or Tom at 314-531-4321.

Very Truly Yours,

Kevin C. Skibiski, P.E
Associate Vice President
Manager, Springfield Office

CITY OF BRANSON, MISSOURI

Capital Improvement Program
Construction Status Report

Date: 9/2/11

Project #	Project Name	Type/Phase	Construction Budget	Contract Amt. to Date	% Complete	Contractor Arch/Eng	Total Change Order Amt	% change	Notice to Proceed	Anticipated Completion	Comments
SEWER											
EN1001	Lift Sta. #30 Capacity Upgrade	Construction	$3,133,276.00	$2,971,689.20	95%	Rosetta			4/19/2010	10/1/2011	Start-up scheduled
ENG39	Compton WWTP Exp	Construction	$4,507,000.00	$4,184,374.90	93%	Branco	$87,236.00	1.9%	4/27/2010	9/20/2011	Punch list being formulated.
SW1102	WWTP Improvements 2011	Design	$54,600.00			RJN			7/25/2011	12/31/2011	Design work under way.
SW1006	Antidegradation Study Ph. II	Study	$218,755.00		0%	Black & Veatch			8/26/2011	3/1/2013	Phase 2 commencing
	Whisper Cove Sewer	design	$36,000.00			To Be Determined				12/31/2011	RFP's will be mailed this month
	Lift Sta #25	Design	$385,000.00			To Be Determined				12/31/2011	RFP's will be mailed this month
SW1004	Lift Sta. #9 Improvements	Design & Study	$47,150.00	$47,150.00	100%	HDR			9/29/2010	7/1/2011	Construction documents forthcoming
WATER											
BUILDINGS											
TRANSPORTATION											
EN1002	Pedestrian Improvements	Construction	$79,937.00	$51,923.75	65%	Brock's Concrete	$39,187.50	49.0%	8/2/2010	12/31/2011	Small projects remaining
	Veterans Blvd Bridge repairs	Design	$50,000.00			To Be Determined					RFP's under review
MISCELLANEOUS											
EN1101	Orthophoto	Design	$59,000.00	$48,218.21		Pictometry Intl.			3/18/2011	10/1/2011	LIDAR information expected in October
PR1103	Tennis Court Resurfacing	Construction	$28,717.00	$0.00		ProTrack & Tennis			9/8/2011	12/1/2011	Preconstruction meeting 9/7/11 to discuss project & confirm start date.
PW1101	Garage Roof Repairs	Construction	$11,800.00			ABI Coating Systems			9/6/2011	12/1/2011	Preconstruction meeting 9/6/11 and Notice to Proceed.
	Stormwater Improvements	Design	$150,000.00			To Be Determined				12/31/2011	RFP's under staff review
	Sunset Walking Path Overlay	Construction	$34,500.00	$0.00		Table Rock Asphalt				9/15/2011	Notice of Award given.
EN1102	Roark Crk Facilities Mtce Trail	Construction	$142,975.00	$0.00		Hunter Chase Assoc				9/6/2011	Notice to Proceed issued
	Lakeside Sidewalk Extension	Construction	$200,000.00	$0.00		In House				4/1/2012	Completing review with MoDOT